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NEW YORK MEDICAL JOURNAL,

INCORPORATING THE

PHILADELPHIA MEDICAL JOURNAL

AND THE

MEDICAL NEWS.

A WEEKLY REVIEW OF MEDICINE.

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VOLUME XCII,

JULY TO DECEMBER, 1910, INCLUSIVE.

NEW YORK:

A. R. ELLIOTT PUBLISHING CO.,

1910.

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New York Medical Journal

INCORPORATING THE

Philadelphia Medical Journal and The Medical News

A Weekly Review of Medicine, Established 1843.

VOL. XCII. No. 1. NEW YORK, JULY 2, 1910. WHOLE No. 1648.

Original Communications.

THE TREND OF MEDICAL EDUCATION IN THE UNITED STATES.*

BY WILLIAM CLINE BORDEN, M. D.,
Washington, D. C.,

Lieutenant Colonel, Medical Corps, U. S. Army, Retired; Dean and Professor of Surgery, the George Washington University, Department of Medicine.

The general standards of education for a learned profession mark the general standard of that profession. In the United States, medical education has been particularly marked by widely differing ideals and practice. While some medical schools have consistently maintained high proficiency, others, and these unfortunately the greater number, have not attempted, or have not been able to reach adequacy in instruction. In the past few years earnest effort has been made to raise the general standard of medical education to a higher and more uniform level. This effort is now being consistently carried forward with every prospect of producing far reaching and much required general improvement in the medical schools of this country and as this society is connected with an institution which is, and has for many years been engaged in the teaching of medicine, I have ventured to suppose that its members may be interested in a presentation of some facts regarding the present status of medical education in the United States and its apparent trend of development.

Medical education in this country has had a somewhat peculiar history; a history showing an intermingling of high ideals and great attainments with the lower motives of opportunism and commercialism. While on one hand but few countries have made higher attainments in medicine, on the other hand, it is doubtful if in any country the minimum educational requirements in the teaching of that art have been lower.

In the 18th century, when this country was still traditionally English, European ideas prevailed and the first medical schools were formed as departments of already founded Universities. The Medical Department of the University of Pennsylvania, of Harvard, of Yale, and of Columbia had such beginnings and still survive as fitting examples of proper conception and right development.

On the Continent of Europe, the university has always wisely been considered the proper home of a medical college and this was the early conception in America, but the rapid growth of the country, its swift expansion into lands west of the original thirteen states, the difficulty and often the impossibility of obtaining higher learning in the newly developed and widely separated communities, and the absence of laws requiring educational attainment by practitioners of medicine, made a demand for physicians and created conditions which led to the establishment of schools for producing them whose requirements were only such as were demanded by the low standards which obtained. Also, although one of the learned professions, medicine until quite recent years was really largely empirical, the teaching and practice of which was based rather upon tradition, supposition, imperfect investigation, and insufficient deductions therefrom, than upon the findings of true science. In consequence, the teaching of medicine was quite in accord with the condition of the art of medicine itself and was almost entirely didactic. Its most famous teachers were those who combined charm of manner and of voice with excellence of diction. In some notable cases these qualities were united with keenness of clinical observation and great ability, and, while every school of reputation boasted one or more such men upon its faculty, in too many schools the personal qualities of the teacher were more in evidence than their professional attainments.

All these conditions led to what might naturally be expected to occur and to what did occur, namely, the wide commercialism of medical education. All that was required to start a medical school was a modest building, affording a lecture hall or two, a dissecting room, possibly a small laboratory but quite often none at all, and a group of medical men who for personal advancement or other reasons, grouped together to form a faculty. The cost of starting and maintaining such an institution was small. Fees from students more than covered the small outlay, and the faculty usually absorbed the balance. Naturally, under such conditions and with such a school, the call was for students, and more students; and the faculty, loathe to disaffect its clientele, received into and graduated from their school, with the minimum amount of friction, difficulty, and discretion.

As the social order in this country became more organized, as the medical profession combined into associations of increasing strength and influence, and particularly as science more and more illumined medicine, the necessity for higher educational requirements became evident and protection of the public against ignorance and incompetency was demanded.

*Read at the meeting of the Medical Society of the George Washington University, Washington, D. C., April 16, 1910.

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In response to this demand, laws, more or less perfect or imperfect, to regulate the practice of medicine were adopted by the different States. In consequence, in many of the States it became difficult or impossible for poorly educated graduates in medicine to obtain the right to practise. Thereupon, colleges realized that to meet the demand they must give better instruction, and for mutual benefit and assistance there arose such associations as the Association of Southern Medical Colleges and the Association of American Medical Colleges. The better colleges required educational qualifications for matriculation, critical study of the medical curriculum was made, and definite standards were established as guides. The necessity for adequate laboratory, museum, library, hospital and clinical facilities was recognized. Finally, with the great advance of medical science, it has become the accepted idea of educators that a medical school is in every respect a school of applied science. During the first two years of the four years of teaching, laboratories with trained teachers are required and during the last two years a human laboratory, namely, a hospital, must be either directly or by affiliation, a part of a school of medicine.

It is evident that with such ideals, the necessity for some action by which schools can be made to conform to the accepted educational requirements has become apparent. But, while there is more or less legislative control of the practice of medicine, there is no legal control of those institutions which teach, or pretend to teach, that science. How, then, can a movement directed toward supporting adequate medical schools and the suppression or elevation of inadequate ones make progress? In part, through the laws already made which regulate practice, for, with the enforcement of these laws, the product of inadequate schools being ill prepared, fail before those State boards which properly guard the portals of entrance to the practice of medicine. The fields for practice open to graduates from an inadequate school consequently become limited, and such limitation works against the school in that men who matriculate and graduate from it realize that their future field of opportunity will be small.

In addition to the restriction arising from the laws regulating practice, two agents of great importance and influence have entered the field of educational improvement in the United States. The medical profession through its great representative body, the American Medical Association, has taken up the important question of medical education and through its Council on Medical Education, in connection with its Council on Medical Legislation, is exerting all its great influence toward bettering medical education in this country. Work on the same lines has been undertaken by the Carnegie Foundation for the Improvement of Teaching. Definite work was begun by the Council on Education of the American Medical Association about six years ago, and since that time the council has worked toward forming a curriculum which may serve as a guide in medical teaching and also, during the last three years, has been engaged in inspecting different institutions of medical teaching in the United States so that a clear concept may be formed of their actual condition. In pursuance of this, members of the council inspected every institution of medical teaching in the United States, making a careful examination of them in accordance with the "essentials of a satisfactory medical college" as laid down by the association. These essentials are twenty-seven in number and cover, first, the entrance requirements, second, the requirements of the first two years with special reference to the laboratories and the work therein, and finally the work of the last two years with special reference to the clinical facilities offered the students. Each school inspected was marked on a scale of one hundred per cent. for each essential. Three classes were made, class "A" being those schools whose mark was above seventy per cent. All such schools were considered adequate, although, of course, there was in many of them room for improvement. Class "B" included all those schools which were between fifty and seventy per cent. This class, the council thought, might be brought up to the standard of class "A" if they adopt certain improvements. Class "C" included all those schools who fell below fifty per cent.

Following the first inspection of the different schools, the schools were informed of their deficiencies and recommendations were made as to their improvement. In many cases, a second inspection was made and all the material relative to the different schools was carefully classified.

The total number of schools visited was about 169, of which 140 were so called "regular" schools. The council after this careful work, felt that it could no longer delay making an authoritative report and at the meeting of the council held in Chicago, February 28th of this year, Dr. A. D. Bevan, chairman, and Dr. N. P. Colwell, secretary of the council, made their formal report. I was present at the meeting as a delegate from this (George Washington) University. The occasion was highly interesting and instructive.

The report of the chairman of the Council on Medical Education was prefaced by his statement that this report as to the standing of the different schools in the United States and Canada had been made with a full understanding on the part of the council as to the responsibility involved. He stated, however, that as the American Medical Association had called upon them for an unbiased report upon the condition of medical education in the United States, this requirement of the association being due to the fact that it felt a duty to the public to determine and forward adequate medical education, the council was now prepared to present the report called for. The chairman then proceeded to report upon the colleges by name and of all the institutions teaching medicine in the United States, the council placed but sixty-nine, or less than fifty per cent., in class "A" as adequate medical schools. It will interest you to know that the Medical Department of this university was so fortunate as to be included in the list of adequate medical schools.

Following the report of the officers of the council, addresses were made by the Hon. E. E. Brown, United States Commissioner of Education, President Henry S. Pritchett, of the Carnegie Foundation, President J. J. Schurman, Cornell University,

and Dr. Victor C. Vaughan, of the University of Michigan.

These addresses were followed with remarks by the president of the University of Iowa and the president of the University of Minnesota. The great educational prominence of the educators who read and discussed papers at this meeting gave special force and significance to the utterances made. Of particular significance was the unanimity of opinion expressed by all. Briefly, the opinions expressed may be summarized as follows:

1. That it is no longer possible (or in any way desirable to attempt) to conduct an adequate medical school on a commercial basis.

2. That a medical school should now be considered a school of applied science.

3. That a medical school should be developed as a department of a university, that it should be an integral part of the university and be treated on the same lines as other departments of such an institution.

4. That at the present time, a minimum entrance requirement of four years in high school or its equivalent should be strictly enforced, and that in the near future an additional year or two of preparation in the premedical sciences of chemistry, physics, and biology should be required.

5. That a degree requirement for entrance to all medical schools would not now and probably would not in the future be desirable.

Bearing upon these conclusions, it was stated, and this was particularly emphasized by President Schurman, of Cornell, that a medical school should now be considered in every sense a school of applied science and that of all scientific schools, it was the most expensive to conduct. Dr. Schurman stated that from the experience at Cornell, it could be said that a medical school was more expensive to maintain than a school of engineering or agriculture. The expense of conducting a proper medical school arises from the necessity of having laboratories and trained teachers in the first two years and hospital facilities, often including the maintenance of a hospital for the last two years of the course. It was pointed out that to maintain such an adequate scientific medical school, the fees from students were entirely insufficient and that the school must be maintained in the same way as are schools of engineering, agriculture, and other schools of applied science. For these reasons, the adequate medical school of the future must be removed from a commercial basis in that the fees of the students will never be sufficient to maintain it, and endowments, gifts, or State aid must be had as with other science schools.

In discussing the preliminary education which will enable a student to properly begin the study of medicine, it was held that for the present a higher requirement than graduation from a high school could not be demanded in all medical colleges, but that it was to the interest of medical teaching that the minimum requirement should be raised to one or two years in college, or better, a year or two of premedical education in chemistry, physics, biology, German, and French. It was the opinion that such a special premedical course would be most valuable, and that while a few medical schools in the United States might still require a degree for entrance, two years of study such as the above, would perhaps be the ideal preparation for the study of medicine. The reason given for the opinion that four years in a college of arts should not be required of all students as preliminary to the study of medicine was that after four years in college, four years in a medical school, and probably one year in hospital, most men would be too old when they entered upon the active practice of the profession, and that so much time spent in preliminary education would diminish the interest of the average student in the real life work which he was to undertake.

One or two years of college work is already required of all candidates who come before the State boards of seven States. Consequently, men lacking this qualification cannot practise in those States. Certainly if two years of college work are to be required before entrance upon a medical course, it would seem that there can be little question but that these years can be spent to greater profit in pursuing a definite premedical course which shall include chemistry, physics, biology, German, and French rather than the ordinary studies of an art course.

In giving the opinion that a medical school should be developed as a department of a university, it was stated by the president of the University of Iowa that "we can no longer hope for anything that is segregated, that is, without thorough cooperation, to give results in education or in medicine. The central thought of a university is research or investigation. Universities are experiment stations for truth, for the discovery of new truths, and the new applications of principles, and medicine is as much a college of applied science as is a college of engineering; therefore, the medical college must be in a university. It cannot be affiliated at arm's length. It cannot be a bifurcated institution. It must be an integral part of the university."

Dr. Pritchett, of the Carnegie Foundation, in his address, laid particular stress upon the overcrowding of the medical profession in the United States, stating that the proportion of medical practitioners to the population was from three to four times greater than in Germany, France, or England. He gave statistics, and from these it appears that the District of Columbia is in this respect more overcrowded than any other part of the United States. He stated, also, that the Carnegie Foundation had been engaged along the same line of work as the Council on Education of the American Medical Association in that it has been making a critical inspection of all the medical schools in the United States and within two or three months it would publish a report giving the result of its investigation to the public.

Special attention must be called to the great importance of all the conclusions expressed and the work being done by the Carnegie Foundation and especially of the action taken by the Council on Medical Education, particularly in that the latter voices the opinion of the great authoritative body of medical practitioners in the United States. As an expression of opinion from that body it is bound

to have great effect upon medical teaching and existing medical schools, and the bearing which this opinion will have upon the work of State examining boards will surely be of the highest importance to medical practice. In twenty-six of the States, the law gives entire authority to medical examining boards to determine what a reputable medical college is and these boards have full power to examine graduates only from reputable schools. As nearly if not all the medical examining boards in the United States are dominated or influenced in their action by the sentiment of the American Medical Association, the result will be that all graduates from schools not approved by the American Medical Association will either not be allowed to appear before many State medical boards or will have great difficulty in doing so. Undoubtedly, also, the public services, the Army, the Navy, and the Public Health and Marine Hospital Service will be strongly influenced by the position taken by the American Medical Association. I have already been unofficially informed that the army would allow no graduates from schools other than those approved by the American Medical Association to appear before it for examination for commission in the regular corps. I anticipate that such action as this will be made official in all services, as the services can hardly afford to accept candidates from inadequate schools.

It is evident that a medical school can no longer continue upon its way entirely in accordance with its own will. The day of supervision, investigation, and report has dawned in medical education. For a medical school to maintain its existence or at least to exist as an accredited, reputable, medical school, giving adequate instruction, it must be conducted on the lines laid down by modern educators. It is equally evident that the present inclination and effort is to make use of the laws already enacted regulating the practice of medicine together with the great influence of the strong medical associations, to force, if I may use the term, medical schools in this country to live up to a required and adequate standard.

These combined influences will doubtless increase the tendency toward a reduction in the number of medical students and medical schools which has already become apparent. The number of medical students (matriculants) in the United States for the year ending June 30, 1909, was 22,145; a decrease of 457 below 1908 and a decrease of 2,131 below 1907. Recent statistics give for a few of the larger medical schools a decrease for this year over that of 1909.

There are now a smaller number of students in medical schools than at any time since 1900. There has been a corresponding decrease of graduates. In 1909 there were 299 less than in 1908; 538 less than in 1907; and 992 less than in 1906.

In the year ending June, 1909, eleven medical schools had suspended or merged into others, and three new colleges were established, making a total net decrease of eight colleges. Since June, a few more colleges have suspended or merged. Up to June, 1909, there has, since 1904, been a net decrease of twenty-two medical colleges. Already as a result of conditions now existing, the total number of medical colleges in the United States is smaller and the percentage of high grade, stronger, medical colleges has been materially increased. This change has been largely effected through the influence of laws regulating medical practice. The influence of the American Medical Association and the Carnegie Foundation will undoubtedly produce still greater improvements along these lines. How far this movement should go may perhaps be inferred from the fact that there are now 165 medical colleges in all countries outside the United States and in this country alone there are now 140, or forty-five per cent. of all the medical colleges in the world.

The protection of the individual and the public health, which is the basic reason for the control of medical practice and the elevation of medical education, requires that whether medical schools be few or many in number, they shall at least adequately teach the science of medicine. As adequate teaching can only be given along the lines which are now being laid down by such bodies as the different Associations of Medical Colleges, the Carnegie Foundation, and the American Medical Association, it is evident that for a school to continue its work in a creditable manner, (and no school can afford to continue in any other way) it must conform to the high standard now required.

1801 California Street, N. W.

A CASE OF TORSION OF THE OMENTUM.

By J. W. Markoe, M. D.,
New York.

Intraabdominal omental torsions are of such rare occurrence and interest that the following case is deemed worthy of record, as it followed the operation of ventral suspension and was, without doubt, caused by the presence of this suspension band. Other operations were performed at the same time that the uterus was anchored to the anterior abdominal wall, but they, in no way, could have caused the lesion, as the position of the twisted omentum was such that it lay between the suspensory ligament, thus formed, and the tense round ligament of the right side, this making the strangulation of the distal end possible. The microscopical findings in the cyst would lead one to believe that it had been incarcerated for some length of time were it not for the fact that the patient had but the one attack of pain which indicated an acute and rather sudden strangulation.

Wiener, in 1900, was the first to call attention to this class of cases and at that time was only able to report seven cases, the majority of which were due to the fixation of a portion of the omentum in a hernial sac. Since his report, a number of similar cases have been published, but in all there seem to have been adhesions between the twisted portion of the omentum and some adjacent part.

The following is the history of the patient:

Miss G., thirty-one years of age. As a child she was never particularly robust, having the usual diseases of childhood, with the exception of scarlet fever and diphtheria. Her menstrual history was that of pain and discomfort but otherwise not abnormal. Four years ago,

she stated that she had two severe attacks of appendicitis and these pulled her down so much that she lost nearly thirty pounds in weight until at last her symptoms became so unbearable that, on April 5, 1907, she sought the advice of a surgeon who, she stated, operated upon her for appendicitis and at the same time fixed her floating kidney and suspended her uterus, all these operations being done at one time through a median incision. Her recovery was rapid and the effect of these operations was most beneficial, she very rapidly regaining her weight and health so that, as she stated, she felt unusually well and remained so until about the middle of November, 1909, when she lifted a heavy weight, causing her to feel at the time that she had strained some thing in her abdomen; it was so slight, however, that it in no way incapacitated her and she continued to do her regular duties and soon thought no more about it. However, on Sunday, November 28th, or about two weeks after the strain, she awoke in the morning with, as she described it, a very bad sick headache, for which she took a large dose of salts. This moved her bowels freely and as at this time her regular menstrual period was due, she was not surprised that it came on with some cramp like pains which naturally were attributed to the combination of the salts and menstruation; by midnight these pains had increased to such an extent that, upon attempting to rise from her bed, she fainted, and her friends immediately called a physician who gave her morphine by mouth and applied hot water bottles to her abdomen, thus somewhat lessening the pain. Her description of the pain was that it started at McBurney's point and extended down behind the symphysis at which point it was the most severe, rather confirming her in the belief that the pains were due to a cramp in the uterus due to faulty menstruation rather than anything more serious. It was at this time that the writer first saw her; her temperature was 100.2° F., pulse, 100, and her general appearance that of a very sick woman; her facies anxious, and she was evidently suffering great pain, which was situated more especially on the right side of the abdomen, low down, with marked rigidity of the entire abdomen but more especially of the right rectus muscle. Her blood count and urine analysis were as follows: Number of red blood cells, 4,800,000; hæmoglobin, from eighty to eighty-five per cent.; color, index, 9; leucocytes, 18,800; small lymphocytes, 7; large lymphocytes, 19; polynuclear neurophiles, 72; eosinophiles, 1; mast cells, 1. Urine: reaction, acid; color, amber; odor, not offensive; specific gravity, 1.018; Heller's test, faint trace; sugar, negative; acetone, present; indican, marked excess; microscopically —diacetic acid, negative; character of sediment, moderate; blood, few cells; pus, some cells; mucus, considerable; epithelium, very small amount; crystalline and amorphous matter; some debris.

Fig. 1.—Omentum with twisted intestine.

The foregoing gave no evidence of the actual cause of her symptoms but it was very certain that she was in need of immediate surgical relief. Immediate preparations were made for operation and within two hours, under ether anæsthesia, the abdomen was opened by removing the old scar. On opening the peritoneal cavity, it was found to contain no fluid, but the cause of the trouble was quite apparent, for lying in the wound, was the omentum, which was rather free from fat, and extended downward over the intestines to the brim of the pelvis; from the right hand border, a small piece, 0.5 cm. in thickness and about 6 cm. in length, was strongly twisted upon itself; this, leading down into the pelvis between the right round ligament, which was tense, and the fibrous band formed by the ventral suspension between the uterus and anterior abdominal wall, had become stretched to about 7 cm. in length. This thin band of omentum was twisted upon itself some six or seven times and at the end there was a mass about the size and shape of a small hen's egg which was deeply congested and filled with blood. It was not adherent to any of the surrounding tissue and was easily brought out into the abdominal wound from between the two bands. The omentum was then ligated above the torsion and the entire mass removed; the abdominal cavity being then explored, no other abnormality was found or any sign of the vermiform appendix or its stump; abdomen closed with interrupted sutures, and skin with Michael's metal clips and dry dressing applied.

Her convalescence was without incident and the wound healed primarily.

Dr. J. E. Welch examined the specimen and found it to consist of a bright red tumor and a light yellow colored twisted pedicle. Viewed from one side, the tumor had an appearance which very much resembled the shape of an infant's kidney, and at the centre of the border, which simulated the hilum, the pedicle was attached. Viewed from the opposite side, the tumor had a slightly lobulated appearance due to three shallow sulci passing radially downward from the hilum toward the greater convexity of the tumor. The growth was surrounded by a smooth, tense shining capsule which presented on the lobulated side radiating from the base of the pedicle a number of fibrous tissue ridges, which from parallel and intercommunicating bands were disposed over the proximal half of this surface of the tumor. The capsule showed no evidence of having been adherent to neighboring viscera. It appeared to be much distended by pressure from within.

The dimensions of the tumor were as follows: Length, 4 centimetres; width, 3.5 centimetres; thickness, 3 centimetres.

Section through the long axis of the tumor presented a bright red surface due to hæmorrhage throughout the growth. Beneath the capsule extending through a zone 5 mm. wide, hæmorrhagic infiltration was so dense that no structure is perceptible. Through the remaining part of the body of the tumor there appear to be fibrous septa radiating from about the point of attachment of the pedicle through the tumor and forming a system of communicating fibres. Scattered through the tumor among the fibrous tissue meshes of the stroma were numerous small cysts many of which were filled with a gray mucoid appearing material, having a gelatinous consistence. Some of these cysts, especially about the cortex of the tumor, contained hæmorrhage. In size these cysts varied from microscopic dimensions to four millimetres in diameter.

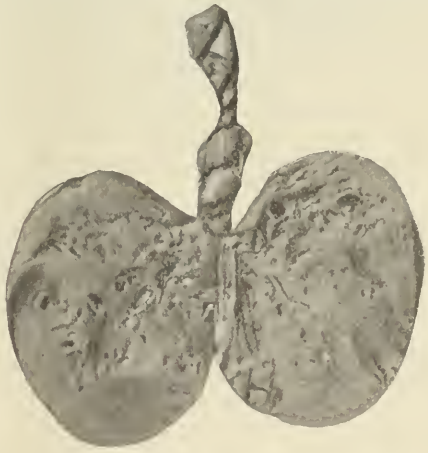

Fig. 2.—Tumor.

In giving the microscopical description it is convenient to describe the tumor under the following divisions:— Capsule, stroma, vascular system, and cystic cavities.

The capsule was covered superficially by a single layer of flat endothelial cells. Beneath this layer of cells was a thin capsule composed of fibrous tissue with the fibres

arranged parallel to the surface of the tumor. This tissue was moderately cellular and had numerous small spaces through it. The entire capsule was infiltrated by an exudate of serum and leucocytes and among the latter were numerous eosinophiles. Small hæmorrhages were to be seen here and there, also foci of fibrin.

The stroma was composed of fibrous tissue which varied in appearance depending on the location in which it was observed. Just within the capsule it appeared as typical adult fibrous tissue, i. e., very long slender fibres predominating, among which were a few long fusiform nuclei. Farther within the tumor where it composed radiating strands or islands of tissue, it was either fibrous as mentioned, or very cellular with nuclei predominating, which had irregular branching shapes and resembled mucous cells with their loosely arranged, radiating processes.

The stroma everywhere was very vascular and was the seat of extensive exudation of serum, leucocytes, and blood. The serum and blood showed extensive coagulation. In the parts of the tumor where the hæmorrhage was most extensive, the fibrous stroma was recognizable here and there only as slender fibrous filaments.

The vascular system was composed of channels varying in size from capillary dimensions to 0.5 millimetre in diameter. The smallest vessels had the characteristic capillary wall composed of a single layer of endothelial cells. The larger vessels, which were for the most part veins, had the usual elastic, fibrous, and muscular elements composing their walls. The muscular coats everywhere showed cloudy swelling and in almost every vessel polynuclear leucocytes could be seen emigrating through the vessel wall. The vessels were universally congested and contained an unusual number of leucocytes and many are filled with thrombi. The capillaries were especially numerous in the capsule and just beneath it, while the larger vessels occupied the central part of the tumor.

The cystic spaces for the most part showed thin fibrous tissue walls on the inside of which could be seen a few flat living cells. The greater number of these cysts contained a coagulated material having the appearance of serum. Some were completely filled with hæmorrhage.

Some of these cystic areas appeared to be merely interconnective tissue spaces which had been forced apart by exudative or hæmorrhagic pressure. The larger real cysts present were of congenital origin, but had probably increased in size from intravenous pressure and inflammation following twisting of the tumor pedicle. As evidence of this there were hæmorrhages and an exudate of leucocytes in some of the true cysts.

The pedicle of the tumor measured five centimetres in length and 0.8 centimetre in diameter at its widest part. It was twisted eight times from left to right. It was bright yellow in color and had the appearance of fatty areolar tissue and was apparently not inflamed.

Microscopical section made across the pedicle showed a structure of dense fibrous tissue which was very vascular. The vessels, for the most part, had well formed walls and they were very much congested and some contained thrombi. There was very little areolar tissue in the pedicle. Here and there were a few hæmorrhages and areas of round cell infiltration indicating the presence of an inflammatory process.

20 West Fiftieth Street.

HIGH FREQUENCY CURRENTS IN THE TREATMENT OF ARTERIOSCLEROSIS.*

By Thomas E. Satterthwaite, M. D.,
New York.

The high frequency current now most frequently used in and about this city is generated mainly by the combined apparatus of three Americans,—Benjamin Franklin, Morton, and Tesla; the latter, however, a foreigner by birth. In 1730 Franklin was the first to construct the influence machine, now known as the static, by which a current is derived from revolving glass plates. Although an electric current may also be obtained from chemical batteries (the discovery of Volta in 1896), from induction coils (discovered by Faraday in 1831), or from an alternating current dynamo, the static is generally regarded with the most favor.

In 1881, Morton was the first to generate high frequency currents, which he derived from the static machine and two Leyden jar condensers, to be improved in 1887 by his "stepup" transformer, where solenoids replaced the regular external armature of the Leyden jars, and further improved by the sparkgap circuits of Lodge, now everywhere in use. D'Arsonval's solenoid followed in 1891. Morton's method consisted in using an induction coil in place of the static machine. The terminals of the two Leyden jar condensers were attached to the ends of a short coil made with a few turns of heavy copper wire. One electrode was connected with one end of the short coil, and the other was brought into sliding contact with any desired turn of coil. The short coil was used to increase the induction. D'Arsonval made the discovery that a current of from 5,000 to 10,000 alternations each minute could be made to traverse the human body without doing harm while increasing oxidation, diminishing excitability, and lowering arterial tension. Apostoli and others confirmed the discoveries of d'Arsonval subsequently. (*Gazette de gynécologie,* August 15, 1895, p. 241.)

In 1891, Tesla, by means of "alternators" and "transformers," was able to further increase the potential, so that currents of higher frequency could be made not only to pass through the human body, lighting up a 100 volt 10 c.p. incandescent lamp in the circuit, but generating a current of 10,000 alternations each second. He used the induction coil, and in fact the d'Arsonval method, except that he added a secondary coil of fine wire, and a single Leyden jar condenser. He held that the greater the frequency of oscillation, the greater the electrical energy that can be passed through the body, and the less the sensibility to it.

In 1893-4, Oudin devised his "resonator," consisting of a solenoid or spool with an insulated copper wire fifty to seventy-five yards long wound around it. This instrument, when "tuned" so as to harmonize with the oscillations of the current, augmented their frequency.

The principle of the high frequency current is that if a very high potential is discharged into a conductor which has a certain self induction and a slight resistance, extremely rapid isochronous oscillations result. There may be hundreds of millions of them in each second. The ordinary alternations of a Ruhmkorff coil are about 200 a second, with an electromotive force of 10,000 to 200,000 volts, while in the high frequency currents the voltage may be from 100,000 to 1,000,000. When the current, from whatever source it has been derived, is acted on by a Ruhmkorff coil, it develops high tension. If further acted on by a sparkgap, and transformed by the condenser,—i. e., the Leyden jar,—it becomes a high frequency current. The condenser augments the intensity of the current.

In 1901, my attention was first called to the beneficial effects of high frequency currents in arterio-

*Read May 5, 1910, before the American Therapeutic Society at Washington, D. C.

sclerosis. I then had under my charge a physician who was recovering from a mild cerebral hæmorrhage, which had occurred about a month before. He had some paresis of the lower extremities and complete paralysis of the left masseter muscle, with severe muscular pains. He gradually regained the use of his muscles, and when seen by me last year (1909) had experienced no return of hæmorrhage. But he had from the first an infrequent pulse, from 30 to 40 continuously. He had been treated by acetylparamidophenol salicylate (salophen), acetylsalicylic acid, and morphine for his muscular pains, strychnine, nitroglycerin, suprarenal extract, digitalin, cactus, and arsenic for his cardiac weakness, but in addition had a pretty extensive course of electricity under Dr. E. B. Perry, of New York, and there was no doubt in my mind but that the electrical treatment was of both temporary and permanent benefit. Dr. Perry used static electricity with long sparks and the fine needle spray. At first the séances were ten minutes in length; later, as improvement was becoming marked, on alternate days.

In another recent case of mild arteriosclerosis with aortic disease and cardiac hypertrophy in a married lady of sixty-five, the Nauheim treatment was given, then a course of iodine, and subsequently the high frequency current. Dr. M. W. Johns, of Utica, New York, carried out this latter part of the treatment. Previous to her coming under my care, the maximum pressure had been 200 mm. Hg. When the electrical treatment was begun, on February 17, 1909, it had fallen to 185 mm. On March 27th it had fallen to 165 mm., on April 10th to 150 mm., and on April 17th to 145 mm. These treatments were given three times a week, each séance lasting from fifteen to twenty minutes. Her husband, a well known physician, in reporting on her condition to me subsequently, said that as a result she was "in every way better; slept well, was less nervous, and felt much happier."

Unless one has a static machine a high frequency coil is best adapted for the high frequency treatment of arteriosclerosis. In using the static machine, there should be a revolution of the plates of at least 350 to 400 to the minute. The outsides of the Leyden jars should be connected to a d'Arsonval solenoid, or an Oudin resonator. In using the d'Arsonval solenoid, the patient is to be connected to both poles, by means of a fibre seat, one wire going into it and the other wire connected to a metal electrode placed in the patient's hands. In using the Oudin resonator, only one pole is used, a wire running from the binding post in the resonator to the fibre seat in the chair, the Oudin in this way giving the same high frequency as the d'Arsonval, but a much higher voltage. This treatment should last twenty minutes, after which the glass vacuum electrode, attached either to a solenoid or resonator, is applied to the patient, using a spark gap that will not be painful to him. This treatment is given from two to three times a week, for about six weeks, or until the blood measure falls to the normal or nearly to it. This was the form of treatment used by Dr. Johns, of Utica.

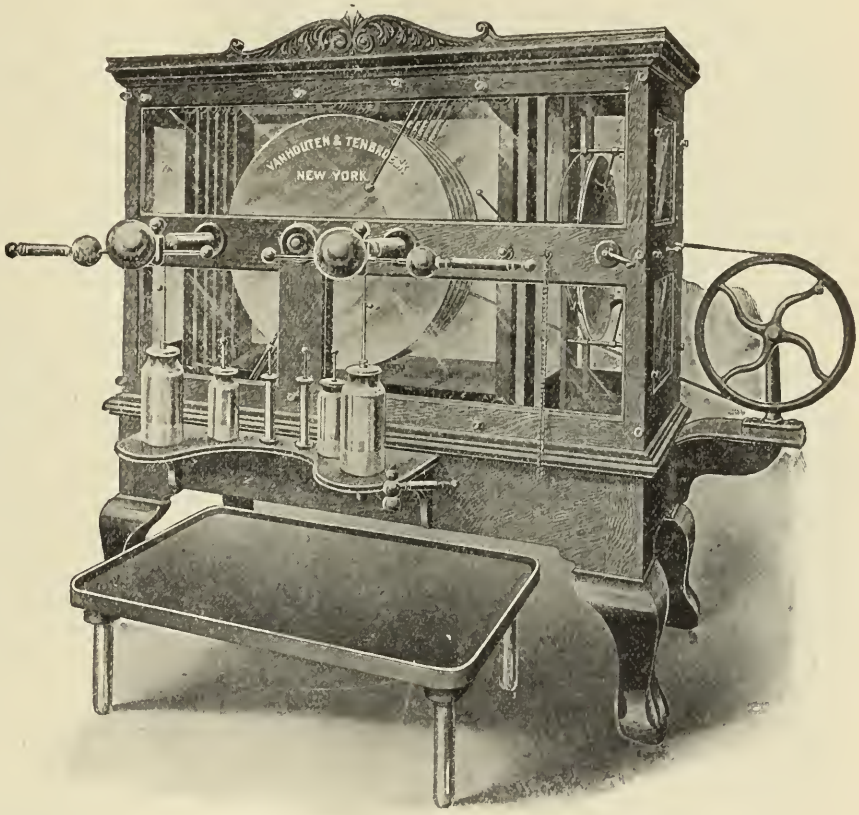

Fig. 1.—The Morton-Wimshurst-Holtz influence machine.

Dr. John P. McParlan, of New York, who is assisting me in the management of one of my cases, uses a twenty-plate machine with an Oudin resonator. He uses a current of from 200 to 250 milliampères for twenty to twenty-five minutes. His autocondensation isolation platform, fitted with a metal back, is covered with heavy plate glass, on which are laid three thicknesses of felt. On this the patient reclines. One pole of the resonator is attached to the metal back; the patient holds the other in both hands. A good method is as follows: The patient is first subjected to the high power incandescent lamp for a few minutes. (Fig. 2.) The blood is brought to the surface, and a sedative effect is produced. Then the static breeze may be given. Pull the sliding poles apart, so that there will be no spark, connect the negative side of the machine to the isolation platform by the long brass shepherd's crook, grounding the positive pole. Place the metal standard near, with the crown (Fig. 3) over the head—the negative electricity streams over the patient's face, so that he feels the breeze. There is also an odor of ozone, which gradually fills the

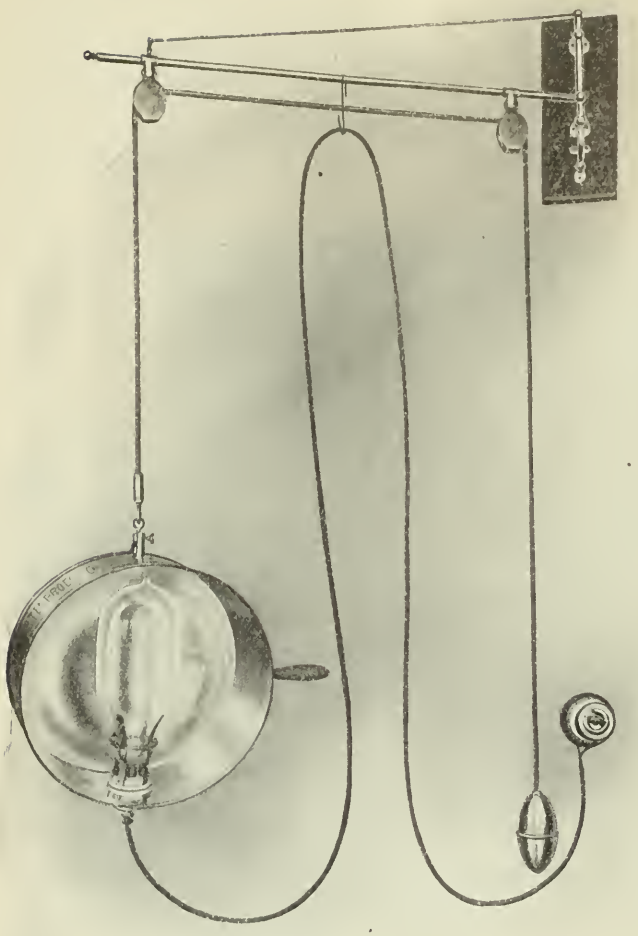

Fig. 2.—High power incandescent lamp.

room; the oxygen of the air has been changed into ozone, or, in other words, electrified. This modality is very soothing and helpful in nervous conditions. Treatment, five to ten minutes. The patient is then subjected to the high frequency current. The plant in this case consists of a resonator, combined with a d'Arsonval solenoid, an adjustable spark gap and a pair of condensers of the Leyden jar type. I use the pattern known as the inductoposmator (Fig. 4). This apparatus is operated by a static machine. The patient reclines on a "condenser couch," which is isolated by glass feet. The cushion has on its under surface a fine metal plate, which runs its entire length and is connected with one pole of the Oudin resonator. The other pole of the resonator is connected with a vacuum electrode, and the fluorescent spark discharge is applied through the clothing to the body by the operator slowly moving the electrode over the surface. The séance lasts ten to fifteen minutes.

Static electricity is now very generally used in this country, for owing to the dryness of our climate it is easy to excite the apparatus. Most use the Holtz machine, and often inside of it is a small Wimshurst to start the larger Holtz. After the Holtz has generated a sufficient amount of current, the Wimshurst is no longer needed. The Holtz static machine will give a current sufficient for eight modalities, i. e., methods of treatment.

Static currents are of relatively high voltage (pressure) but the ampèrage (quantity) is small, so that you cannot burn your patient with it, if the electrode is kept moving. With this caution, therefore, you never can use too strong a current. The relative voltage is measured by the length of the spark in the spark gap, between

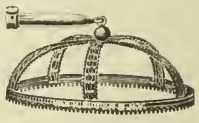

Fig. 3.—Metal crown.

the sliding poles. It is at least 35,000 volts for the first inch of spark, and less for every other inch. The voltage capacity depends on the diameter of the revolving disks, and the speed of the machine.

The Wimshurst-Holtz machines should be run at high speed, giving a current of from about 150 to 500 milliampères. It is held generally that the static machine is more sedative than the coil, and in other respects more effectual.

The powerful waves of the static

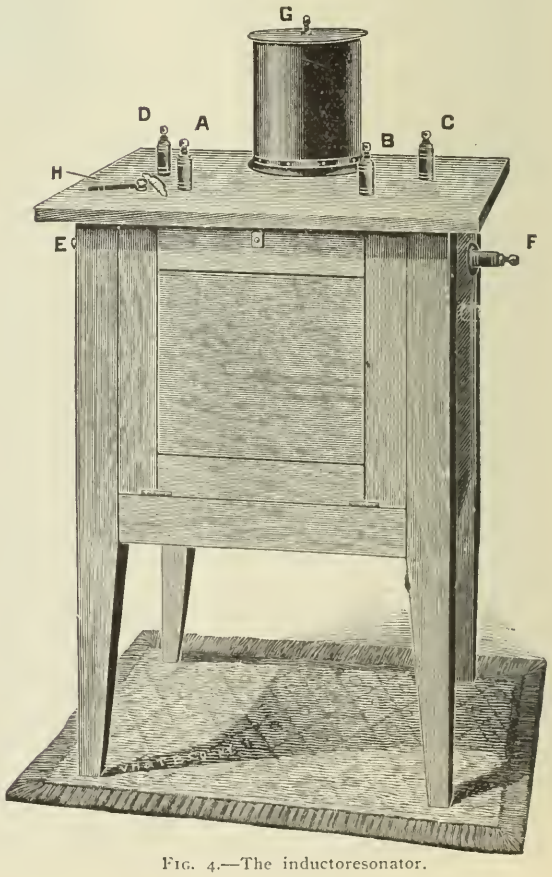

Fig. 4.—The inductoresonator.

form of electricity cause short waves of vibration in the capillaries, promote metabolism in an extraordinary way, and do no harm. In my experience, a diminution in arterial pressure is the regular sequel to the use of the high frequency current, but the séances should not be protracted beyond the time at which the maximum pressure falls to the normal. A reduction beyond this point might, of course, be harmful.

But the high frequency currents alone are not uniformly permanently effectual. Moutier[1] very properly states that while high frequency currents reduce arterial pressure, they are not uniformly effective, and may be inhibited by errors in diet, constipation, or various reasons. Though, as a rule, he was able to secure a reduction in the arterial pressure after a single sitting, occasionally it required as many as sixteen sittings. The total effect, however, was produced in two, three or five minutes. But he also said that the reduction once obtained can be retained, at least for as much as three years, without relapse. My experience thus far has been that while the pressure may not always be reduced at each sitting, there is, notwithstanding, a progressive fall, in all instances, as the weeks go by.

In this connection, it has sometimes been advised to use the faradic current as an adjuvant. Intestinal atony is, curiously enough, often a complication of arteriosclerosis. Then the faradic current aplied over the abdominal walls may be very helpful to relieve the constipation. In addition, I use as the case indicates mercurials, iodides, and iron. In syphilitic arteriosclerosis, mercurials or the mixed treatment are surely indicated. In gouty arteriosclerosis, iodides, iron, and arsenic. I am in the habit of giving them serially. A course of the iodides is to be followed by a course of iron. In very old people, I find small doses of arsenic is even better than iron.

7 East Eightieth Street.

THE CYSTOSCOPE AS AN AID TO DIAGNOSIS.*

By Stephen E. Tracy, M. D.,
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The marked mechanical improvement in the cystoscope during recent years and the refinement of technique whereby a complete and thorough examination of the bladder can be made and the ureters catheterized in a few minutes, with the patient in a comfortable position, without an anæsthetic and with little or no discomfort, has made the cystoscope an instrument of great value as an aid to a diagnosis.

With the cystoscope, we are able to examine every portion of the bladder, including the trigone and the internal vesical sphincter; and to observe the contraction and relaxation about the ureteral orifices. The character, quantity, and manner in which the urine is ejected from the ureter, the presence of congestion, inflammation, mucus, pus, ulcer, saculation, tumor, calculus, foreign body, fistula, and abnormalities is readily noted.

With the ureteral catheter, we can detect a stricture, compression of, or obstruction in a ureter by a calculus, determine the capacity of the pelvis of the kidney, the degree of hydronephrosis, and the quantity of urine excreted by either kidney. Specimens for chemical, microscopical, and bacteriological examination, and animal inoculation can be obtained and certain lesions of the kidneys can be treated. When the catheters are in the ureters, the time in which glucose appears in the urine, from either side after a hypodermic injection of phloridzin is given and the amount of time which elapses before the urine is colored blue and the intensity of the coloration on either side after a hypodermic injection of indigo carmin is given can be noted, and by these tests, in a relative way, the functional activity of the kidneys may be determined. In normal kidneys glucose appears usually in the urine from fifteen to twenty minutes after a hypodermic injection of phloridzin and the urine becomes blue usually from eight to twelve minutes after a hypodermic injection of indigo carmin is given.

In order to illustrate a number of the conditions enumerated and not consume too much time, I have taken twenty-five consecutive cases (not including the ordinary cases of cystitis) from my records and shall give the essential features of each case.

Case I. Mrs. C., æt. sixty-five, was referred to me to determine the source of marked hæmaturia. The hæmorrhage was so free that the patient was weak, anæmic, and practically bedridden. Cystoscopic examination showed the bladder to be normal and the blood coming from the kidneys.

Case II. Miss O., æt. thirty, complained of discomfort and at times attacks of severe pain in the right side of the abdomen, and of frequent micturition. The urine contained pus and a few erythrocytes. Cystoscopic examination showed a mild cystitis with some redness about the right ureteral orifice. Catheterization of the ureters and x ray examination were negative as regard calculus. A guinea pig whose peritoneal cavity was injected with urine from the right kidney, died of peritonitis due to infection by the colon bacillus.

Diagnosis.—Pyelitis, due to infection by the colon bacillus.

Case III. Mrs. M., æt. thirty-eight, was referred to me for repair of lacerations and for the correction of a retrodisplacement of the uterus. She complained of pain in the right loin, discomfort in the bladder, frequent and painful micturition. The urine contained mucus, pus, and a few erythrocytes. Cystoscopic examination showed a marked cystitis with ulceration of the bladder wall. Guinea pigs inoculated with urine from the left kidney developed tuberculosis.

Diagnosis.—Tuberculosis of left kidney.

Case IV. Mrs. G., æt. forty-two, was a large, corpulent woman, who complained of pain in upper right side of abdomen and discomfort in the bladder with frequent micturition. Cystoscopic examination showed a contracted bladder (35 c.c.), marked cystitis with ulceration, a dilated and displaced right ureter. A thin, brownish, offensive pus was obtained when a catheter was passed to the right kidney. Tuberculosis did not develop in guinea pigs inoculated with the pus. The urine from the left kidney was normal.

Diagnosis.—Pyelonephrosis.

Case V. Mrs. K., æt. sixty-five, complained of constant pain in the bladder with marked tenesmus. The urine contained pus and blood. Cystoscopic examination showed the bladder to be contracted (100 c.c.), inflamed, and ulcerated.

Diagnosis.—Carcinoma of the bladder.

[1] Moutier. *Comptes rendus de l'Académie des sciences*, 1904, pp. 781 *et seq.*

*Read before the Philadelphia Obstetrical Society, January 6, 1910.

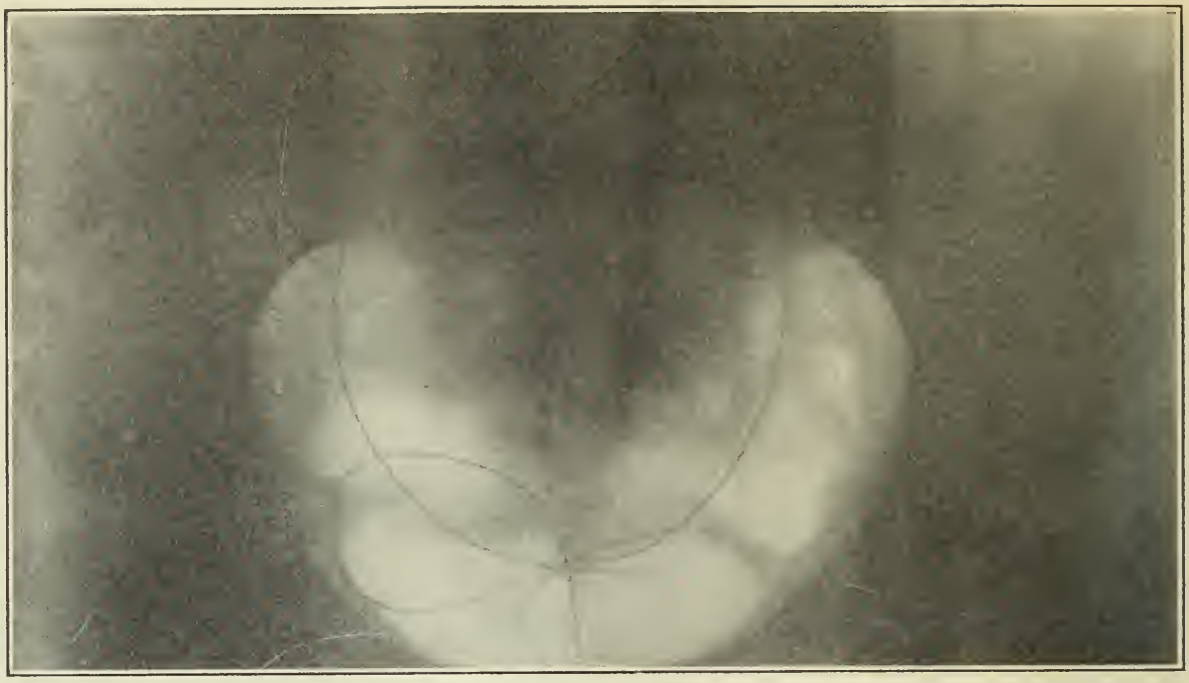

Fig. 1.—Showing the location of the ureters from the kidneys to the bladder.

Case VI. Mrs. H., æt. twenty-six, complained of pain in the right loin, discomfort in the bladder, frequent and painful micturition. When she came under observation the temperature was 103° F., and the pulse rate 110 a minute. Cystoscopic examination showed a marked cystitis with purulent urine coming from the right ureter.

Diagnosis.—Cystitis and pyelitis.

Case VII. Mrs. S., æt. forty-two, complained of almost constant discomfort in the bladder with frequent micturition. Vaginal examination revealed a fibromyoma uteri. Cystoscopic examination showed a mild cystitis with marked diminution in the capacity of the bladder.

Diagnosis.—Contracted bladder due to pressure from a fibromyoma uteri.

Case VIII. Miss H., æt. twenty-one, contracted a gonorrhœal infection and had a bilateral salpingo-oophorectomy. After the operation she complained of discomfort in the pelvis and had been tamponed for many months with no improvement. Cystoscopic examination showed a well marked trigonitis.

Case IX. Mrs. V., æt. thirty-nine, had suffered for three or four years with pain in the upper, right side of the abdomen. The physician who referred the case, diagnosticated the condition as one of movable right kidney with attacks of Dietl's crises, and wished to know if the functional activity of the kidney had been impaired. Cystoscopic examination showed the bladder to be normal. Both ureters were catheterized, and the urine from the right kidney was normal in amount and composition.

Diagnosis.—Movable right kidney and chronic appendicitis. (Diagnosis was confirmed at operation.)

Case X. Mrs. Y., æt. thirty-two, had suffered for several years with pain and discomfort in the right side of abdomen. When the patient came under observation she had a temperature of 103° F., pulse 110 a minute, pain and tenderness in right loin, painful and frequent micturition. The urine contained mucus, pus, blood, and epithelial cells. X ray examination showed no calculus in the kidney or ureter. Cystoscopic examination showed a marked cystitis with ulceration about the right ureteral orifice. The left ureter was catheterized and the urine obtained from this kidney was normal. Cultures from the urine were negative. There was a stricture of the right ureter about 6 mm. from the mucous surface of the bladder, through which a fine catheter could not be passed, and through which no urine escaped. After several attempts a filiform bougie was passed beyond the stricture and when withdrawn a few drops of pus escaped into the bladder.

Diagnosis.—Pyelonephrosis. Pathological diagnosis.—Tuberculosis of the right kidney and ureter.

Case XI. Miss Y., æt. thirty-two, complained of discomfort in pelvis and back and a constant desire to urinate. She had had her appendix removed and had, at a later date, a hysterorrhaphy performed. A few weeks before coming under observation she consulted a physician who advised an operation to correct a displacement of the uterus. Vaginal examination showed the pelvic organs to be normal. Cystoscopic examination showed a mild cystitis with the capacity of the organ considerably diminished. After the cystitis was cured and the bladder distended to its normal capacity, the symptoms disappeared.

Case XII. Mrs. W., æt. sixty-nine. Several months before coming under observation she complained of pain immediately after urination. At times the urine was clear and at other times bloody. The amount of blood was increasing. Cystoscopic examination showed an ulcerated tumor on the anterior wall of the bladder which began at the internal vesical sphincter and extended upward about five centimetres and to the left lateral wall as far round as the ureteral orifice.

Diagnosis.—Carcinoma of the bladder.

Case XIII. Mrs. F., æt. thirty-three, complained of severe, agonizing pain in the right side of abdomen. Cystoscopic examination showed the bladder to be normal. On the left side the ureteral catheter was passed to the kidney. On the right side the catheter met with an obstruction, it would not pass six centimetres above the ureteral orifice. X ray examination showed a shadow on the right side below the brim of the pelvis.

Diagnosis.—Calculus in the right ureter.

Case XIV. Mrs. S., æt. fifty-two. An uretrovaginal fistula had developed ten days after a panhysterectomy, with wide dissection of the pelvic structures for carcinoma of the cervix uteri. Two weeks later the leakage of urine from the vagina ceased. I was anxious to know whether the opening had healed or whether the ureter had become constricted with destruction of the kidney. Cystoscopic examination showed the urine being ejected from both ureters into the bladder.

Case XV. Mrs. L., æt. thirty-four, was seized suddenly during the night with pain in right side of abdomen, which was followed by nausea and vomiting, a temperature of 101° F., and an acceleration of the pulse rate. The urine contained leucocytes and erythrocytes. From a physical

examination it was impossible to determine whether the condition was an acute exacerbation of a chronic appendicitis or an attack of renal colic. Cystoscopic examination showed a mild cystitis. A ureteral catheter was passed to the kidney on the left side. On the right side the catheter met with an obstruction, it would not pass three centimetres above the bladder. X ray examination showed a shadow on the right side.

Diagnosis.—Calculus in the right ureter.

Case XVI. Miss B., æt. twelve, weight 150 lbs. The patient passed all the urine from the vagina and the question was: Did the ureters terminate in the vagina or was there a vesical vaginal fistula? Cystoscopic examination showed a greatly contracted bladder with the ureters in normal position, and a fistula just within the internal vesical sphincter.

Diagnosis.—Vesicovaginal fistula.

Case XVII. Mrs. A., æt. thirty, complained of discomfort in the right side of abdomen and at times shooting pain along the course of the ureter. At times there were a few erythrocytes in the urine. X ray examination showed a shadow on the right side, below the brim of the pelvis. Cystoscopic examination showed the bladder to be normal. A large ureteral catheter was passed to the kidney without meeting any obstruction. The urine was subsequently watched but no stone was passed.

Diagnosis.—Neurasthenia.

Case XVIII. Mrs. McG., æt. thirty-seven. After an operation for an irreducible femoral hernia, the patient had a marked nephritis; the urine was scanty and contained blood and tube casts. A few days later the urine had a brownish color, a very offensive odor, contained pus, blood, and large pieces of mucus. I was not able to explain the condition of the urine and wondered if there was a necrosis of the bladder due to injury inflicted at time of operation. Cystoscopic examination showed a considerable amount of decomposed blood clot with a marked cystitis. There was no evidence of injury to the bladder.

Case XIX. Miss N., æt. twenty-eight, after being apparently cured of gonorrhœal infection suffered discomfort in the pelvis. Cystoscopic examination showed a marked trigonitis with a mild cystitis.

Diagnosis.—Trigonitis.

Case XX. Mrs. B., æt. twenty-eight, complained of discomfort in lower abdomen with frequent micturition. No cause for the symptoms could be found by physical examination. Cystoscopic examination showed the bladder to be normal. A ureteral catheter passed to the right kidney. On the left side the catheter met with an obstruction, it would not pass four centimetres above the bladder. X ray examination was not possible because of location.

Diagnosis.—Calculus in the left ureter.

Case XXI. Miss M., æt. twenty-three, complained of pain and soreness in the right side of the abdomen, especially in the region of the right iliac fossa. Cystoscopic examination showed the right ureteral orifice to be somewhat red and swollen, and a small calculus in the bladder, which had evidently come from the right side.

Diagnosis.—Calculus in the right ureter which had passed into the bladder.

Case XXII. Mrs. S., æt. thirty-eight, complained of pain and discomfort in the left side of the abdomen, for which she had been subjected to an operation, and from which she derived no benefit. Cystoscopic examination showed granular patches in the bladder. A ureteral catheter passed to the right kidney. On the left side the catheter met with an obstruction, ten centimetres above the bladder.

Diagnosis.—Calculus in the left ureter with cystitis.

Case XXIII. Mrs. C., æt. thirty-nine, complained of pain and discomfort in the lower abdomen and of a constant desire to urinate. Cystoscopic examination showed an encrusted tumor involving the anterior wall of the bladder as far down as the internal vesical sphincter and the left lateral wall beyond the ureteral orifice.

Diagnosis.—Carcinoma of the bladder.

Case XXIV. Mrs. K., æt. fifty-four, had suffered for several weeks with discomfort in the bladder. She stated that the urine contained blood, and a week before coming under observation pus was passed. Cystoscopic examination showed swelling and redness about the left ureteral orifice and a small calculus in the bladder. The urine was clear and cultures from the kidneys were negative.

Diagnosis.—Calculus of the left ureter which had passed into the bladder.

Case XXV. Miss B., æt. twenty-four, complained of tenderness and at times attacks of pain in right side of abdomen. Cystoscopic examination showed the bladder to be normal. A ureteral catheter was passed to the left kidney. On the right side the catheter met with an obstruction about ten centimetres above the bladder. When the point of obstruction was tapped with the catheter, the patient flinched and stated that that was the painful spot. X ray examination did not show the calculus.

Diagnosis.—Calculus in the right ureter.

In this series of twenty-five cases, there were seven cases (Cases XIII, XV, XX, XXI, XXII, XXIV, and XXV) in which the symptoms were

Fig. 2.—This shows the location of the ureters from the kidneys to the bladder.

due to a calculus. In five cases the calculus was in the ureter, as was demonstrated by obstruction to the passage of a catheter and in most cases by an x ray examination. In two cases (Cases XXI and XXIV) there was evidence of traumatism about the ureteral orifice and the calculus was found in the bladder. In five cases where the ureter was obstructed, the calculus, after being tapped gently by the catheter, passed into the bladder. In Case XV the diagnosis was not easy, as the patient was corpulent, and had a chronic appendicitis. While waiting to recover from an attack of bronchitis before having the appendix removed, marked pain and tenderness developed in the right side of the abdomen, with the symptoms as enumerated. As developments showed subsequently, she had an attack of renal colic associated with a chronic appendicitis. The calculus was passed within forty-eight hours after the ureter was catheterized. When she recovered from the bronchitis, I removed a chronically inflamed vermiform appendix.

Fig. 3.—This shows a distorted left ureter, probably the result of an operation on the kidney and ureter. The loop at the upper end is due to the catheter being curled upon itself in the pelvis of the ureter.

In Cases XXI and XXV, the patients consulted prominent surgeons who removed the vermiform appendix, which procedure did not cure the symptoms. In both cases the attacks of pain ceased after the calculus was passed from the ureter.

There is no doubt that many patients have been subjected to operation with a diagnosis of appendicitis when the symptoms were due to a calculus in the right ureter. Surgeons are realizing more and more the importance of making an accurate diagnosis of these conditions, and with the intelligent use of the cystoscope, catheterization of the ureters and x ray examination this mistake will no doubt be made less frequently.

Case XXII was one of interest. Before coming under observation for the relief of the symptoms already enumerated, the left kidney was explored; and as no calculus was found, the abdomen was then opened and an abnormal loop in the sigmoid was side tracked by a lateral anastomosis.[1] After the calculus passed, the attacks of pain in the left side ceased, and after the cystitis was cured the symptoms disappeared. About two months later the patient had an attack of renal colic on the left side. Catheters threaded with a wire were then passed to both kidneys without meeting any obstruction. X ray examination showed no shadow along the ureters; but on the left side the ureter took a sharp curve outward, about five centimetres below the kidney, probably the result of the operation, which anchored the kidney outward and below the normal position.

In case of suspected calculus in the ureter, it is highly important to make a cystoscopic examination and to catheterize the ureters. For this particular purpose I always use a large (6 or 7 French) catheter. This has two advantages: First, even a very small calculus is usually readily detected: and, second, a large catheter dilates the ureter and makes it easier for the calculus to reach the bladder.

While an x ray examination is of great value in a case of suspected calculus in the ureter, we all know of many cases where a shadow on the x ray plate has been taken for a calculus, when due to material outside of the ureter. Such a mistake may be due to a calcified gland, an atheromatous patch in a bloodvessel, a phlebolith, a foreign body in the intestines, or to a fœcal concretion in the appendix. The only way to determine whether a shadow on the x ray plate is due to a calculus in the ureter or to some foreign substance without, is to clearly and accurately locate the ureter, by passing a fine wire through the ureteral catheter before the x ray picture is taken. The use of the wire in the catheter would also be of value in making a diagnosis of a single kidney with two ureters, or in a case of multiple ureters, and it might be of value in making a diagnosis of a horseshoe shape kidney.

In cases of renal calculus a diagnosis should not be made after any one method of investigation; but only after a combination of methods—careful history, cystoscopic examination, catheterization of the ureters, and x ray examination, with the catheters in place threaded with a wire.

Among the number there were three cases (Cases V, XII, and XXIII) of carcinoma of the bladder, all too far advanced to hope for a cure by

[1] Personal communication from the surgeon who operated.

a radical operation. In Case V, the patient was made comfortable for many months by appropriate treatment, but the carcinomatous infiltration gradually increased. In Case XII, a diagnosis of ulcer had been made about ten days before the patient came under observation. Cystoscopic examination showed a tumor the size of a small lemon, with an ulcerated surface, which involved the left ureteral orifice. The tumor was readily palpable by bimanual examination. The patient died of uræmia four months later.

There were two cases (Cases III and X) of tuberculosis of the kidney. In Case III, the diagnosis was made by animal inoculation. In this case the amount of urine from the left kidney was about one third less than from the right kidney. On the left side the phloridzin test was delayed about five minutes, and the indigo carmin test about four minutes. The patient was apparently cured by open air treatment and forced feeding. She has been well nearly two years. This case shows the importance of investigating both sides with equal care when studying a renal lesion. The symptoms were on the right side while the lesion was on the left. As I have observed several times, this same thing holds good in a variety of renal lesions. In Case X the diagnosis was made by microscopical examination of the kidney and ureter. In this case the bladder was saved to a large extent, by a stricture of the ureter at the bladder. Two years before coming under observation this patient was under the care of a surgeon who failed to find the ureters, and made a diagnosis of cystitis.

There were two cases (Cases II and VI) of pyelitis. In Case II, the patient had attacks of renal colic, probably due to the pus which caused some interference with drainage through the ureter. In Case VI, the patient had been catheterized three weeks following an operation, and had been treated several weeks for the resulting cystitis with no improvement. This case, I believe, was due to an ascending infection. The nature of the infection was not determined as cultures were not taken.

Case II, shows that it is not safe to make a diagnosis of calculus from a history of renal colic. Such symptoms are frequently due to pyelitis.

There are two cases (Cases VIII and XIX) of trigonitis following a gonorrhœal infection. Before coming under observation, these patients had been treated by hot douches and tampons, with little or no improvement. When the trigonitis was cured the symptoms disappeared. Here, I want to call attention to the folly of tamponing and douching patients when no pelvic lesion can be detected by vaginal examination. I have seen so many patients with gonorrhœal infection that have been tamponed and douched for months, with no improvement, that I feel a cystoscopic examination should be made in all cases after the acute symptoms have subsided. The cystoscope often clears up obscure symptoms in these cases and the relief is prompt after appropriate treatment is instituted.

In Case XVII, the diagnosis was neurasthenia. This patient was subjected to an exploratory operation by a surgeon who found a calcified gland which would account for the shadow on the x ray plate. This case emphasizes the value of the cystoscope and of the ureteral catheter, and also the importance of locating accurately the ureter before the x ray picture is taken.

In Case IV, the diagnosis was made by catheterization of the ureter. This case had been diagnosticated by another surgeon as carcinoma of the stomach. At operation it was found that there was a large pus sac at either pole of the kidney and the function of the organ was entirely destroyed. The ureter was dilated to such an extent that at first appearance it looked like a loop of small bowel.

Fig. 4.—Case XXII, showing a sharp turn in the left ureter; probably due to the downward and outward displacement of the kidney following an operation.

In the analysis of this small series of cases which is a fair representation of the character of ordinary renal lesions, it will readily be seen that the diagnosis would have been obscure, difficult, and in

some cases impossible, without the knowledge gained by the use of the cystoscope. In Cases IV, X, XI, XII, XXI, XXII, and XXV a wrong diagnosis had been made and in three cases (Cases XXI, XXII, and XXV) an unnecessary operation had been performed, from neglect of an investigation such as could have been made by the use of the cystoscope.

In closing I wish to thank Dr. Mulford K. Fisher, röntgenologist to the Stetson Hospital, for his valuable assistance and kindly cooperation.

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A FEW OBSERVATIONS ON THE PROSTATIC URETHRA.*

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When a man, in the course of an acute gonorrhœa, discovers that he has frequent desire to micturate and at each act only evacuates a small quantity followed by a prompt return of the desire, he can hardly appreciate the fact that he has acquired a condition or an extension of the disease which may cost him his life, or, at best, may cause him many uncomfortable days and nights. This simple symptom indicating a posterior urethritis is most frequently caused by the gonococcus, but it may be and is frequently the result of carrying other infectious material into the deep urethra by catheters or other instruments or even by unsterile water.

The prostatic urethra extending from the posterior or superior layer of the triangular ligament to the bladder is the part which concerns us most when we consider diseases which affect the deep urethra. The membranous urethra is seldom permanently involved in the inflammatory phenomena of the urethral tract. True, there is no sharp histological line defining the different parts of the urethra and it may be, and usually is, involved in urethral inflammations, but its structure is such that time wasted in considering hypotheses of inflammations of the membranous urethra can be better spent in consideration of means for the cure of disease located in other parts of this tube.

The prostatic urethra in itself differs in no wise from that of the membranous or spongy portions. Should the entire urethra from the bladder to the meatus be dissected from its bed of connective tissue and removed and then split in its entire length and spread out flat one would hardly be able to tell one end from the other except that in the prostatic end one might be able to note the gland openings more bunched and openings corresponding to the utricle and the ejaculatory ducts, and the surface would be greater owing to large size. Its peculiarity is due to structures continuous and contiguous with it.

The prostatic urethra averages about three centimetres in length in a man not afflicted with prostatic hypertrophy. Its diameter is greatest at the middle of its length. Its roof or anterior surface is comparatively smooth while its floor or posterior surface is marked by a peculiar eminence at the point where its diameter is greatest. This eminence normally is about three millimetres high and three millimetres wide at its base. On its anterior surface near the top is the mouth of the utricle, near the lower lateral margins of which the ejaculatory ducts open into the urethra. On either side of the base of this eminence are located the openings of the twenty or thirty ducts leading from the prostatic lobules and alveoli.

From the base of this body running toward the membranous urethra is a very narrow low fold very much resembling a frænum.

This, with the exception of the openings of the ducts, is a description of the veru montanum as I have seen it many times, and each of you can prove with a good urethroscope which throws a steady light down the tube by reflection. Back of the veru the urethra falls in folds into the fenestra of the tube.

The prostate consists of about one half its size of glandular structure, and of connective tissue and involuntary muscle of each about one quarter. This glandular tissue connects with the prostatic urethra by the aforementioned twenty or thirty ducts. The veru montanum and its contents, the urticle and ejaculatory ducts, are not a part of the prostate but have a distinct wall of their own and lie outside of the true capsule of the prostate. All who have had the pleasure of seeing screen reproductions of the beautiful photomicrographs of Dr. Alexander, of New York, will recall how clearly this fact was shown by the sections cut at different levels. Unless the floor of the urethra is torn it is my belief that, no matter which perineal operation is done for the removal of the prostate, the veru and ejaculatory ducts are rarely destroyed.

The arteries supplying the prostate and prostatic urethra are from the middle hæmorrhoidal and inferior vesicle. The prostate receives its nerve supply from the hypogastric plexus of the sympathetic. The prostatic urethra is supplied by the hypogastric plexus and from the spinal system by way of the sacral plexus.

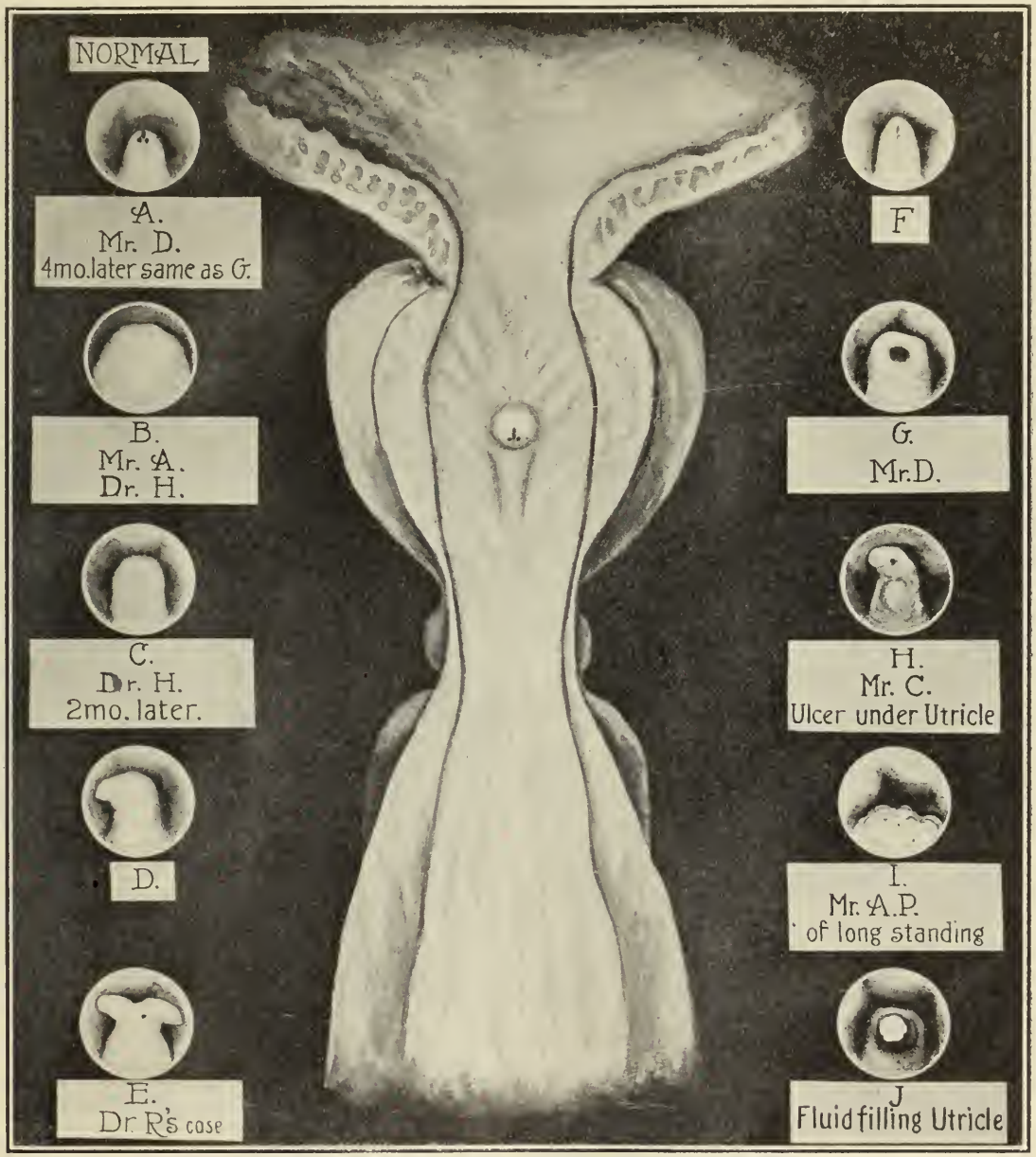
There are three conditions of the posterior urethra to which I wish to refer, although two of them are in reality prostatic. They are: 1. Contraction of the internal urinary orifice. 2. Suppurative lobular prostatitis. 3. The veru montanum.

Textbooks and literature are not overburdened with information on the subject of *contraction of the internal urinary orifice*. In fact, some authors assert that it never exists. The following brief record will describe a case:

Case. T. C. K., aged sixty-three; weight, 225 pounds; suffered first from urinary trouble six years before date of this examination. At that time he passed a calculus. Two years later frequent micturition began. In day time much oftener than normal and at night as often as every half hour. Urethra was nine inches long. Residual urine, six ounces. Urine cloudy, containing pus and large flakes and red cells by microscope. Prostate not prominent by digital examination. A diagnosis of prostatic obstruction with possible stone in the bladder was made, and he was operated upon by Young's method. No stone was found, and the prostate was not very large but hard to get at owing to its depth. The tip of the index finger was with much difficulty inserted into the vesical neck, which was then stretched. The bladder was drained

*Read before a joint meeting of the North Central Section of the American Urological Association with the Chicago Urological Society at Chicago, March 24, 1910.

through a tube which was removed at the expiration of the second day. Great pain was then experienced at the end of each micturition, and he was able to retain the urine but for a short time. At the end of a week it was decided to open his bladder anteriorily, and with a finger in the internal orifice through the suprapubic wound and a knife through the perineal opening I was able to cut the constricted internal orifice in three places and then to stretch it by sliding one index finger alongside the other. The feel of this opening to the finger was similar to that of trying to push the finger through the mouth of a two ounce bottle. This man requires the passage of a 32 sound at intervals to keep open the stricture of the internal urinary orifice.



The veru montanum: appearance of views through No. 24 F. tube, twice the actual size. (These are the first series of pictures made which show pathological conditions of this organ.)

This same condition I have seen in several instances where a perineal section was made for the relief of urinary fistula in which a chronic prostatitis was also present.

Suppurative lobular prostatitis is responsible for many cases of "morning drop." Enlargement of the veru montanum with spastic contraction of the posterior urethra prevents all the pus from passing into the bladder, and it seeps along the urethra to the external meatus. A positive evidence of its presence is the appearance of a copious discharge in a patient who to all intents and purposes is about well. I have such a case at the present time who causes me considerable annoyance. The patient contracted his fourth gonorrhœa six months ago. He will go along in fair condition for a time with the shreds gradually diminishing in number and specific gravity, and will then report that without any premonitory symptoms except a reflected irritation in the anterior inch of the urethra a copious discharge will appear. This phenomenon is due, I think, to an infected lobule becoming filled with pus caused by its duct becoming plugged and, from prostatic muscular contraction or bodily exertion this plug is

forced out, allowing the pus to flow into the urethra. Examination with the urethroscope has been very unsatisfactory owing to extreme sensitiveness and copious hæmorrhage. A recent examination showed the veru filling the entire canal. Pus from the last outburst contained gonococci so numerous as to simulate a new infection. Massage of the prostate with irrigations of a 1 to 4,000 solution of nitric acid clears this up within a few days. I believe pus from the posterior urethra frequently passes into the anterior urethra as well as into the bladder.

Where only an alveolus attached to one of these prostatic sinuses is involved only a minute quantity of pus would be thrown out.

The veru montanum is responsible for much more human suffering than is generally charged to it, a fact to which I first called attention in a paper published in the *American Journal of Dermatology and Genitourinary Diseases* of November, 1907. From this paper I quoted the following in a paper read before the American Urological Association June 7, 1909, and published in the *New York Medical Journal* of August 14, 1909: "There are certain chronic cases in which examination of the posterior urethra with the urethroscope will show the presence of a very large and succulent veru montanum. The caput will be seen filling the urethra at this point. The actual cautery will serve well to reduce the swelling, but a quicker and better way is to remove the top of the hypertrophy with the sharp edge of the deep urethral tube. . . . Only a small portion will be removed, as the swollen caput will be pushed away from the cutting edge of the tube. It is remarkable how quickly this little operation will produce benefit in the patient suffering from a discharge from the deep urethra due to this cause and with a train of symptoms of sexual neurasthenia."

It is now nearly ten years since I began the routine use of the deep urethroscope, and although I have learned a few things from the practice I appreciate the fact that there is much more to learn concerning the treatment of lesions of this part of the canal. I now rarely ever cut off the top of the veru; not because I am afraid to do so, but I find that applications of strong solutions of silver nitrate will accomplish the same result, though requiring a little more time. These applications should not be made oftener than once in a week, although there is very little reaction following them. About midway between treatments I am in the habit of irrigating the entire canal with a 1 to 4,000 solution of nitric acid.

Inflammation of the veru montanum is not always due to gonorrhœa, although this is its most frequent cause. It may be due to any of the causes which produce prostatitis and it cannot be distinguished from the latter except by examination with the deep urethroscope. It may also complicate a prostatitis or a seminal vesiculitis, especially the latter.

Case. I have a patient now who never had a gonorrhœa but who excessively masturbated. His trouble began when he was seventeen years old. He is now thirty-five years of age. You will recognize his condition by Figs. *B* and *C*. After quitting masturbation he was troubled by nocturnal seminal emission, as many as three in a night having occurred. He was afflicted with pain in the sacral region and formication in the perinæum. Although he would approach a woman with an erection, as soon as he would enter, the penis would become flaccid and he would ejaculate. Coitus was never satisfactory until he entered college, for at that time he took unto himself a *grisette*. For a time his condition became apparently normal until he went to excess, when the old condition of pain in the back and emissions returned. After leaving college and incidentally his *grisette* he improved for a time, but the old condition, pain, flaccid penis with premature ejaculations, returned. His first treatment consisted of an application of a ten per cent. solution of silver nitrate on a cotton mop through the long tube to the veru montanum and with marked relief. The second treatment was one of a two per cent. solution and he suffered for several days thereafter, requiring anodynes for his relief. The third treatment of a seven per cent. solution was followed by but four hours of pain, but patient was dosing himself with buchu, hyoscyamus, and bromides. The fourth treatment was followed by irritation until the next morning. This was of a ten per cent. solution. The fifth treatment was of a fifteen per cent. solution and caused very little distress. Note the difference as shown by the charts. There was no bleeding from the deep urethra while making the last treatment.

You will note that this patient complained of sacral pain. Reflected pain is a common symptom and by remembering that the sacral plexus is the origin of the sensory nerves to this structure, reflected pain may be found at any other part supplied by nerves from this plexus. Pain in the anterior two inches of the urethra is a very common symptom and one may be led to that part of the urethra in search of the cause. Frequent desire to urinate with efforts to evacuate another drop or two after completion of the act is a symptom common to many patients. In rare cases there is marked tenesmus with the appearance of a drop of blood with the last drop of urine. "A fulness or heaviness in the deep urethra which may be reflected to the rectum is a symptom frequently complained of by patients. Shreds are usually but not always present in the urine. The urine to-day may be full of shreds and to-morrow absolutely clear, and again in a few days full of shreds. Irritation of the sexual apparatus is usually marked. Continued erections without apparent cause, even while the patient is waiting for treatment, have been observed. Later, from prolonged irritation, the opposite train of symptoms appear—loss of desire for sexual indulgence, weak erections, premature or delayed ejaculation. With the occurrence of ejaculation the patient is often annoyed by sharp pain of varying degree in the deep urethra or reflected to the rectum or perinæum. . . . Examination of the prostate and vesicles may show them to be normal, but usually the prostate is somewhat enlarged. The vesicles may or may not be engorged."

In the preceding two paragraphs I have quoted quite freely from my paper of June 7, 1909, as I have no reason to change my views as to the symptomatology. Pruritus ani and also hypochondriasis are frequently present.

When the deep urethral tube is gently passed, if the urethra is fairly normal, there is usually no bleeding. But if inflamed, blood will soon ooze into the tube. When inflamed the veru montanum bleeds in proportion to the degree of its engorgement. If much inflamed and the tube has failed to start bleeding the mere touch of the cotton mop will induce slight hæmorrhage. This is why reflected light is preferable to direct illumination. The veru, as it bobs into the fenestra of the tube, very much

resembles an exposed glans clitoridis. This simile I called attention to in my previous papers and you will note the resemblance in the accompanying pictures.

By referring to the accompanying illustrations you will note a few of the deformities the veru may acquire.

Pus is frequently seen in the mouth of the utricle, and the mouth of the utricle is not infrequently seen apparently closed, with the secretion showing through, very much resembling a salivary ranula. (See Fig. *J*.) This secretion as soon as expressed gathers at the fenestrum, quickly solidifies, and resembles slightly softened gum Arabic.

In Figure *H* is pictured an ulcer seen near the base on the anterior surface of the veru. When the veru is inflamed the openings of the ejaculatory ducts can rarely be seen, as, owing to the swelling and homogeneous coloring, they are rendered more or less invisible.

The treatment as stated in the consideration of a case is chiefly the judicious use of silver nitrate. Other preparations may be used, but silver nitrate, if intelligently used, will obviate the necessity of using the proprietary preparations in this as in other urethral diseases.

The frequent use of the pronoun of the first person singular number in this paper will not, I trust, be considered an evidence of egotism when you remember that prior to my paper of November, 1907, no attention, in medical literature, as far as I know, had been called to diseases of the veru montanum, and, at the meeting of the American Urological Association in 1909 my paper was the only paper on the subject, although it was freely discussed, and as I said at that time, "I do not wish to presume that in all diseases of the deep urethra the veru is involved, . . . I trust that this paper may lead others to investigate inflammation of the veru montanum," and I am gratified to know that that suggestion is bearing fruit.

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ERRONEOUS DEDUCTIONS FROM PHYSIOLOGICAL EXPERIMENTATION WITH ERGOT.

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The drug ergot has, at various times, been the object of much study as to its constitution and the subject of much experimentation as to its physiological action. We all know how complex is organic chemistry and it is not surprising that there have been as many results from the many attempts to analyze this strange fungus and to determine its active principle.

That it has a single active principle that will produce in pathological states of tissue the effects which I have observed many thousands of times from the hypodermic administration of an aqueous solution of the solid extract of ergot I have seen no reason to believe. On the other hand I have no reason to disbelieve or to discredit the various findings of physiological experimenters, even though they do not appear to harmonize. I may even say that the knowledge that two experimenters had noted diametrically opposite effects from the use of the same preparation of ergot on two animals, would not lead me to conclude that one or the other experimenter must be wrong nor, most apparently contradictory of all, would it suggest to me the possibility that ergot had more than one definite ultimate action upon the same kind or state of tissue.

The one thing to which I do take exception is the deducing by the physiological experimenter of conclusions which determine a narrow limitation of the sphere of ergot in the treatment of disease.

When I read in a brochure on ergot, issued by a great English pharmaceutical house, an emphasized caution against the use of ergot in congestion of the brain, or in congestion of the lungs, I must infer that the author of such advice had his limitations in clinical experience, or in the character of the preparation which he used, or that his imagination had no limitations; because the clinical experience of many others, as well as of myself, has demonstrated that in these conditions ergot has a corrective power that may well be termed magical. When in a highly scientific article in a journal devoted to pharmacology and experimental therapeutics I find but two practical suggestions made as to the use of ergot in therapeutics, viz., shock and post partum hæmorrhage, and, in another report of a series of similar investigations, I find not only a general negation as to its utility, but also a direct and positive caution to the profession to beware of putting faith in those (such as myself) who bruit the virtues of ergot (I regret that I have not that article at hand from which to quote verbatim), I am profoundly impressed with the vanity of physiological experimentation as applied to the determination of the province of ergot in therapeutics.

It is with the object of pointing out some of the errors made by such experimenters that I am writing this paper, knowing, as I do, that it would be a calamity to the profession, and yet more to the wards of the profession, the sick and suffering ones, should such teaching as I have indicated be accepted as the truth by practitioners of medicine.

As well as I may determine from the reports of the physiological experimenters upon their investigations of ergot, their chief objects appear to be to determine the effect of that drug upon the blood pressure and upon the womb.

"Our lack of success in obtaining increase in blood pressure when we gave ergot into the stomach" and following quotations (unless otherwise stated) are from an article before me by W. H. Cronyn and V. E. Henderson in the *Journal of Pharmacology and Experimental Therapeutics*, August, 1909.

As I said before, I take no exception to the findings of such experimentalists, and, indeed, I discover in this article many things which confirm my own observations and conclusions which have been based wholly upon clinical experience. "We would, indeed, be inclined to advise that ergot be always used intravenously or intramuscularly." In no paper that I have written upon ergot have I advised any other mode of administration except by hypodermic injection. "If injected intraven-

ously a fall in blood pressure always precedes the rise." I have never injected ergot into a vein because I apprehended shock. That this apprehension was well founded is shown in this report. "This fall is produced by all the Galenicals (some ten in all) which we have tested . . . does not occur with ergotoxine. . . . The fall varied in each preparation roughly with the quantity injected and the rapidity with which the injection was carried out." It would appear from this that the fall noted was not a part of the physiological action of the drug, but simply an indication of the shock due to the method used. I once had the experience of a man tumbling from his chair beside me into my lap in a faint due to his watching me prepare the hypodermic for him. I had not yet introduced the needle, but I then had the demonstration of a fall in blood pressure, to the extent of semisyncope, due to another sort of shock, and no more associated with the action of the drug than was probably true of the cases here reported. "The fall was with every preparation tested followed by a rise." "Ergotoxine brings about a long continued contraction of the walls of arterioles and increases the movements of the uterus." I happen to have at hand this quotation from Sollman and Brown. "Ergot is commonly supposed to produce a powerful and persistent contraction of bloodvessels."

From Burroughs, Wellcome, & Co.'s brochure I quote: "The results of laboratory experiment favor the view that the effect (of ergot) on the arteries and on the uterus is due to a stimulation of the myoneural junctions. . . . This view contraindicates the use of ergot in pulmonary congestion or hæmorrhage . . . post mortem examination of animals to which had been administered toxic doses of the specific principle, ergotoxine, which acts on the blood pressure and on the uterus, confirms this contraindication, since in such cases the lungs are found intensely congested. For the same reason, the use of ergot in hæmorrhage or congestion of the brain cannot be advised."

We have in the above quotations the bases upon which are founded the inferences that ergot is contraindicated in many diseases, in some of which my own observations and the experiences of others have demonstrated ergot to be as nearly a specific as is quinine in malaria, or as is opium in pain. What then is the explanation of this apparent contradiction between physiological experimentation and clinical demonstration?

It will be well, in considering this question, that both experimentalist and clinician bear constantly in mind that there is a vast difference between stimulating the normal smooth muscle to a state of tonic contraction and the normalizing of that smooth muscle which, from some cause, has depreciated in physical state and functional capacity. The former is the result attained by the experimentalist; the latter is the result which the clinician produces when he treats the sick with ergot. Whenever I speak of abnormal or depreciated tissue, I now and always refer only to such abnormal tissue as has not deteriorated beyond the possibility of restoration to functionating capacity.

It is not the business of the clinician to experiment with, nor to treat, the normal smooth muscle, for the simple reason that it does not need treatment. The only smooth muscle fibre that does need treatment is that which is weak, stretched, exhausted, paralyzed, incapable of response to its accustomed stimulus, and thereby responsible for the complex symptomatology that characterizes a disease.

So far as I now know, I was the first to recognize and to point out to the profession the singular characteristic which makes ergot of such immeasurable value in practical therapeutics, viz., that in pathological cases—that is to say, in cases in which there exists pathological unstriped fibre or other contractile tissue of bloodvessels or hollow viscera, ergot *selects* to expend its energy upon that pathological tissue, and that its effect is corrective, and, also, that, in pathological cases, ergot does not markedly act upon normal fibre. If ergot did act upon the normal fibre in the pathological cases and, especially, if it acted more vigorously upon the normal than upon the abnormal, as is assumed by the experimentalist ("also it must be remembered that a vessel, whose wall is pathologically altered, is not apt to give a good response to such a stimulus as ergot"), it would have been contraindicated in practically all the conditions to which I have applied it. The favorable and, often, magical results which I have seen throughout the thirty-seven years of my practice are the best possible evidence to me that it was not contraindicated; and, if not contraindicated, it follows that the *a priori* arguments, based on physiological experimentation, are fallacious when applied to the realm of pathology and therapeutics. As to the pathological findings after administration of toxic doses in laboratory experiment, it is well known that the beneficial effects of many remedies when administered in proper therapeutic dosage, bear no relation to the ill effects of improper and toxic doses. The toxic dose of ergot has no place in the treatment of the sick. I will here repeat what I have stated in other papers, that in all my experience with ergot I have never seen a suggestion of ergotism.

It is both scientific and eminently proper to state the effects observed after applying a given dose of a stated preparation of ergot to an animal, but it is neither scientific, logical, nor proper to assume and assure that the same drug will produce the same effects when applied to the human animal in whom exist abnormal areas of those classes of tissue upon which ergot expends its energies, and it is especially unscientific, illogical, and unfair to endeavor to impress upon the medical profession dicta which are based neither on experience, practical demonstration nor fact.

It goes without saying that ergot must be distinctly contraindicated in many states of disease if it uniformly "brings about a long enduring contraction of the walls of arterioles" or produces "powerful and persistent contraction of bloodvessels." Such effects imply great increase in blood pressure which, in thousands of cases, would be a catastrophe. The truth is that in the applications which I have made it has more often lowered than raised blood pressure, has calmed tumultuous heart action, softened the hard and bounding pulse, produced calm in place of high tension and excitement,

dissipated states of congestion in brain, lungs, abdomen, and pelvis, aborted inflammations, relieved aphasias, promptly ameliorated acute paralyses, quickly terminated the initial chill of developing fevers, abolished pain due to congestion, and even the pang of angina pectoris has promptly yielded to its magic. The truth is, also, that only the clinician who has made large use of ergot and in a great variety of diseases can have even an approximately just conception of the true effect of ergot. This true effect cannot be expressed by saying that it "brings about a long enduring contraction of the walls of arterioles and increases the movements of the uterus" nor by stating that it raises blood pressure. The raising or lowering of blood pressure after the administration of an appropriate dose of ergot in a case of disease is a mere incident in connection with the energizing (process of normalizing) by the ergot of some abnormal tissues which had been unable, in their pathological state, to properly functionate. Whether the blood pressure increases or diminishes depends entirely upon the interrelation of all the abnormal elements that existed before the ergot was given. It may be roughly stated that if the failure to functionate of the abnormal areas of contractile tissue had resulted in a lowering of the blood pressure, the effect of the application of ergot will be to raise it; if such failure to functionate had caused a rise in the blood pressure, the effect of ergot will be to lower it.

In other words, whatever the state, or symptom, that has been produced by the failure to functionate of any area or areas of the contractile tissue of bloodvessels or the hollow viscera (the abnormal changes in such tissues, not having passed beyond the line of degeneration) whether the state of symptom be pain, pressure, œdema, excess or diminution of glandular function, increase or decrease of tension, nervousness, irritability, reaction from narcotics (including alcohol), congestion, chill, convulsion, spasm, shock, syncope, intestinal or other paresis, will be ameliorated or relieved by the hypodermic administration of a proper preparation and dosage of ergot.

To the mere experimentalist upon normal animals and to all others who know no more regarding the peculiar province of ergot in therapeutics than they have obtained from books and lectures on materia medica or reports of laboratory experiments, this statement will appear extremely broad, if not, indeed, absolutely unwarranted; but it is precisely what I wish to declare; and the declaration is not made upon mere theory nor empiric practice but it is the logical deduction from more than a third of a century of practical experience in the rational application of this drug.

As a student, I was taught that ergot acted through the vasomotor centres, and in a paper which I wrote twenty-five years ago I expressed this theory, but I soon after discarded it and have since believed that ergot applies itself directly to the subnormal tissues which need its corrective energy; but being neither an experimentalist, nor a student of ultimate pathology, I have been unable to explain to others, nor to myself, just how its corrective energy was applied, nor why, in the pathological cases upon which I used it, I did not observe those effects which are stated to occur when it is applied experimentally to normal animals. I am indebted to Dr. Homer Wakefield, of New York, for an explanation which appears to me to be rational and I am glad to have for myself his confirmation of the faith which is in me and to be able to give to the profession a reasonable explanation of one of the most unique facts in the whole range of therapeutics.

Dr. Wakefield assures me that in the earlier processes of deterioration of tissue three states occur which are related to the selective energizing by ergot of the abnormal rather than the normal tissue, when that drug is administered therapeutically. Those states are hyperæsthesia, lessened density, and increase of equilibrium length of fibre. By equilibrium length of fibre is meant the length of normal fibre in the state of physiological rest. The increase of equilibrium length explains the lessened contractile power of the altered tissue. The lessened density implies a greater porosity and therefore a greater capacity to absorb that for which it may have an affinity. All experience demonstrates that the contractile tissue of bloodvessels and the hollow viscera has an affinity for ergot. It follows therefore that when ergot is introduced into the circulation and goes with the blood to all the ultimate parts of the body it is to the more sensitive and more porous of that class of tissue that it applies itself and the porous and elongated fibres which absorb it become condensed and the equilibrium length is shortened. The fact that the normal fibres are not so porous and sensitive as the abnormal fibres determines against the application of the ergot to them, in subjects in whom exist areas of the abnormal fibre. It is well known that when a muscle is overstretched it loses its power to contract against resistance, but when in some way restored to normal length it regains and tends to retain contractile power. This latter fact helps to explain some of the striking and continued effects which I have observed from even one administration of ergot.

The experiments reported in the paper before me demonstrate the necessity for large doses of ergot. "The inference that I would draw is that the pharmacopœial doses of ergot are ridiculously low and that for per os administration at least an ounce of any fluid extract if not more should be given." When I prescribe ergot to be taken by the mouth I make the dose usually from 20 to 40 minims, rarely one drachm. From these doses, however, I observe effect. One of the reasons why I commend and always prefer to give ergot hypodermically is that ergot is offensive to the stomach and, from my experience, I would think it practically impossible to give to patients ounce doses of a fluid extract of ergot and have it retained. It would appear that the reason that excessively large doses are required to produce effect in experimental work is that the normal fibre does not so readily absorb the ergot. The fact that ergot does more readily apply itself to the abnormal fibre, together with the probability of the existence of some abnormal fibre in some apparently healthy animals, may account for the occasional failure of the experimenter to observe the usual effects upon normal fibre from a given dose.

The selective effect of ergot upon the fibre of greater equilibrium length and lessened density is illustrated in the centuries old and, for centuries, practically sole application of ergot, viz., to the gravid or recently emptied uterus.

"The therapeutic use of ergot was at one time very widespread and one reads of the curing of hæmoptysis, of bleeding from the bowels and uterus, of the cure of aneurysm, of the expulsion of uterine polyps, of the production of premature labor and abortion, and increase of the natural movements of the uterus leading to the delivery of the fœtus. Our knowledge (!) now leads us to hesitate before accepting these wonderful clinical reports."

The "knowledge" referred to is evidently that which was gained from experiments on animals. I have already shown that this is no standard or criterion from which to infer the effect of ergot upon pathological tissue in the subject treated by the medical practitioner. The assumption that "knowledge" is limited to the experimentalist and that the observations made by thousands of medical practitioners of the effects of ergot do not constitute "knowledge" is, at least, quite gratuitous, and some people might regard it as a reflection upon the intelligence and capability of clinicians. This quotation reminds me of a saying of the late Josh Billings, that "the trouble with some folks is that they know so many things that ain't so."

As to the action of ergot upon the uterus there are two important considerations: First, a changed state of the womb fibre, either pathological or physiological; the latter, like the former, being extended in equilibrium length, and second, the relation, in time, of the periods of especial normal wave (rhythmic) movement to the application of the stimulus. The only instances, five or six, in which I have produced uterine cramp with ergot, were when I gave it at the period of menstruation. Those periods during gestation at which the woman would have menstruated, if she were not pregnant, at which there is an increase of rhythmic movement and the final menstrual cycle of pregnancy, parturition, are the periods when ergot will most likely demonstrate its energy upon the uterus. Except during these cycles of movement, or in states of pathological fibre, the uterus is not likely to be affected by any ordinary dose of ergot; especially is this true if there exist elsewhere in the subject areas of abnormal tissue, which would indicate the administration of the drug. With the exception of the consideration which should always be given to the gravid womb, I do not know of any positive contraindication to the hypodermic application of ergot, in reasonable dosage, to any subject in whom exists such abnormal vital contractile tissue as I have before indicated.

In cases of vascular rupture, cerebral or pulmonary, the likelihood is greater of relieving the tension which produced the rupture, than of increasing the tension and extravasation.

In conclusion, I desire to say to the medical practitioner whose experience with ergot has been limited: Do not hesitate nor fear, because of the innuendos or warnings of pharmacists or physiological experimentalists, to use, whenever indicated, this beneficent drug, whose peculiar and specific function is to correct and normalize that tissue whose abnormal state, and consequent inability to properly functionate, forms the basis of a multitude of the diseases which you are called upon to treat. By its proper use you will be able to relieve much suffering and, in many instances, you will be able to accomplish more than you can do with any other drug in the saving of human life.

THE STIMULATORY ACTION OF THE OOSPERM IN THE UTERUS.*

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The uterus is formed, roughly speaking, by the union of the middle thirds of the two Müllerian ducts, while the upper thirds of these structures, continuing distinct and remote from each other, constitute the Falloppian tubes. Occasionally, however, it happens that the middle portions fail to fuse and yet from one only or from each there may be evolved a uterus as physiologically fit and as capable of discharging the functions of menstruation, gestation, and parturition as any normally developed organ. When two functionally active uteri do coexist it is noteworthy that they not only menstruate simultaneously but if one is occupied in responding to the stimulus of an oosperm the menstrual function in the other is thereby held in abeyance.

The uterus, it must be remembered, before it can harbor and respond to the stimulatory action of an oosperm must have completed its growth, and it not only must have attained its adult state, but it must be capable of exhibiting at least occasionally the external manifestations of menstruation even although it may be incapable of displaying these with the accustomed regularity. It is stated that women of this country who have never menstruated have nevertheless become pregnant, but I am constrained to believe that this statement is unverifiable and must have originated through some misunderstanding or lack of discrimination of facts, for I have several times had under observation women who had lived a marital life for years before reaching the climacteric age and had never menstruated, but I have never yet seen one thus circumstanced who had ever been pregnant. It is of course well known that women who menstruate infrequently may and do become mothers, but I am confident that a state of sterility prevails in all cases in which the agent which invokes menstruation is either not engendered or the uterus is incapable of responding to its action. It is an undoubted fact that the power to beget offspring and the power to menstruate are intimately correlated.

In this country the uterus usually attains its adult state in about thirteen or fourteen years, and unless inhibited by gestation and possibly by lactation it should exhibit with more or less periodic regularity the phenomenon of menstruation until the woman reaches the age of about forty-six, the age at which the climacteric begins as a rule to assert itself.

*Read before the Royal Society of Edinburgh, January 24, 1910.

Thus the average duration of the period of activity of this organ is about thirty-two years. There are facts, however, which justify us in concluding that in the ordinary course of events menstruation does not end when ovulation ceases. It is customary for a woman to continue to menstruate more or less regularly for three or more years after she has ceased to be capable of being impregnated. Very rarely it happens that a woman while still young and in apparent good health never again menstruates after the birth of her only child, or that a multipara who has reached the age of forty or more years when she is pregnant for the last time never again menstruates after this conception. Furthermore, we remark that not only may one ovary become transformed into a cyst and be removed by surgical intervention without the function of menstruation being either immediately or remotely affected thereby, but both ovaries may suffer a like fate and for a greater or less length of time even thereafter the menstrual discharge may make its appearance with wonted regularity.

It is alleged that menstruation is determined by the stimulating influence of a substance emanating from the ovary and the question naturally arises, Is this material eliminated from one ovary only at a time or from both ovaries simultaneously? The latter hypothesis appears the more feasible one when we take into account what obtains when two functionally vigorous uteri coexist and when we recall the fact that extirpation of one ovary never affects materially the function of menstruation. On the other hand, if the corpus luteum is capable of exerting the mighty influence upon the uterus which is attributed to that body, and considering also that ovulation in the human female means as a rule the ripening and dehiscence of one ovum only at a time, it is truly difficult to believe that it is customary for both ovaries to functionate simultaneously. It is very evident that the source and nature of the influence which causes menstruation as well as the mechanism of this phenomenon itself are still controvertible subjects and questions calling for further elucidation.

The uterus which is peculiarly adapted for parturition is specifically endowed for gestation, yet it not infrequently happens that the oosperm is arrested and proceeds to develop in some structure outside the uterus. That structure may so efficiently adapt itself to the function which it vicariously assumes that the fœtus thus lodged may be enabled uninterruptedly to complete its development and growth in the recognized period of nine months. The bloodvessels, however, in such an ovigerous chamber and especially those immediately concerned in meeting the nutritive requirements of the product of conception are generally so badly circumstanced that it seldom happens that an extrauterine gestation proceeds far before a breach in the continuity of one or more of the physiologically enlarging vessels takes place and the hæmorrhage which thus results kills invariably the embryo and endangers the life of the mother. If the embryo perishes during the first two or three weeks of its existence, then the menstruation next due after the occurrence of fertilization is not suspended, but menstruation is suspended if the embryo lives beyond the fifth week and if the vessels of the vicarious ovigerous chamber should chance to meet all requirements so that the fœtus is enabled to attain maturity, then menstruation, strictly speaking, is held in abeyance throughout the gestation period of nine months. At the expiration of this time the fœtus if it be not rescued dies and thereafter the menstrual function is reestablished in about six or eight weeks; that is, at about the same time as that at which menstruation is likely to be reestablished when the child is born naturally and is not suckled by the mother. Here I may incidentally observe that the breast changes which are so pathognomonic of an actively progressing gestation may be revealed as early and will sooner or later be as pronounced in an extrauterine as in a uterine pregnancy. During the evolution of an extrauterine pregnancy more or less membranous material may be extruded early from the uterus, but apart from this there is no physical evidence of change occurring in this organ. It undergoes no enlargement. There is no increase in its bulk and no softening of the cervix. Moreover there is none of that port wine discoloration of the vagina dependent upon vascular engorgement and which is an invariable concomitant of uterine pregnancy.

The quality of the blood going to an ovigerous chamber is the same whether the oosperm is lodged in the ovary, the Falloppian tube, or the uterus, and notwithstanding that the stimulus of the oosperm itself and the vascular reaction induced thereby is in all cases the same yet the response manifested by the vicarious structure is very different to that manifested by the normal organ—the uterus—because the inherent properties and characters of the cellular elements of these structures respectively are so dissimilar. In the vicarious chamber the resulting changes are essentially inflammatory in character and cause irreparable damage to the implicated tissues, whereas in the natural chamber the changes are physiological and not pathological in kind and they may during thirty-two years of a woman's life disappear and be reinduced on as many as twenty or more separate occasions, without the utility of the uterus being in any way altered thereby.

I have had the advantage of dealing with six cases of full time extrauterine pregnancy, and one of these was ovarian. In this case the stroma of the ovary had vanished entirely and the corpus luteum had no doubt been put out of action at an early stage of the gestation. The fœtus and placenta were enclosed in an intact fibrous sac formed by the tunica albuginea. The ovarian bloodvessels had proved unequal to the task of furnishing a sufficient amount of nutrient materials to meet the progressively increasing needs of the fœtus, and they had consequently been supplemented efficiently by the omental vessels, a vascular continuity between the omentum and the gestation sac having been established through vascularized adhesions. At an early stage of the existence of every extrauterine pregnancy the peritoneal cells constituting the external covering of such a gestation sac produce a greater or less amount of coagulable lymph, and by means of this exudate the extrauterine gestation sac contracts adhesions with neighboring organs and structures. The cells of the serous covering of the

pregnant uterus never exhibit this tendency. In the vicarious and the natural ovigerous chamber, in fact the only reaction which is the same in both, is that which concerns those vessels from which the embryo abstracts immediately its nutrient materials.

The fully developed uterus in its ordinary condition weighs little more than an ounce, but directly after a full time parturition it may weigh as much as a pound and a half or even three pounds. This enormous increase in weight is partially attributable to an augmentation in the blood and lymph contents of the organ, but it is more especially due to a great increase in the size of the various protoplasmic units. The increase in the case of the musculature cells is in fact so great that they are seldom less than eleven times longer and five times thicker than they are under ordinary circumstances. Nutritive channels and protoplasmic entities which in the virgin state elude detection even under the highest powers of the microscope become in the pregnant state very discernible.

Now, the uterus besides possessing a general or nutritive irritability is endowed with two special or specific irritabilities, and for the display of these the presence of inorganic ions like lime and potash are essential, but the manifestation of the irritabilities themselves are dependent upon the inherent properties and characters of the different cellular elements of the organ. In virtue of one of its specific irritabilities the uterus responds to some still unknown internal stimulus and there results menstruation whilst in virtue of the other it reacts to the direct vital stimulus of an oosperm, and there results that series of local and remote changes which are admitted to be pathognomonic of uterogestation. As already remarked these two special irritabilities are more or less interdependent and the correlation is initially vascular.

Under ordinary circumstances the ovum as soon as it is fertilized is attracted speedily to and is arrested and detained in the uterus by chemiotaxis. Immediately it comes to rest it exerts an influence not upon any localized spot or limited area, but upon the whole organ. No secondary ovigerous chamber is formed in or by the uterine wall and neither a decidua capsularis nor a decidua reflexa is produced. From first to last the cavity of the uterus is *the ovigerous chamber.* This organ is not antagonistic to, but welcomes and is eager and anxious to furnish everything for, its tenant. There is no need for the latter to burrow into or attack hostilely its domicile: The relationship of the offspring to its mother is never that of a parasite toward its host.

At first the oosperm grows so rapidly that within two or three days of its lodgment in the uterus it may be as much as ten or twelve times larger than when it came to rest in the organ. The energy engendered in the ovum by fertilization arouses such activity in the endothelial cells of the uterine capillaries that forthwith the permeability of the walls of these vessels becomes increased and in consequence of this increased permeability the oosperm experiences practically no difficulty in obtaining from the maternal blood all the materials which are requisite and necessary for carrying on metabolism. Metabolism means a liberation of chemical energy, and in virtue of this the increased permeability of the walls of the capillaries is upheld as long as the vital activity of the germ mass is merely maintained. Between the sixth and tenth weeks of pregnancy the placenta is evolved, but as the existence of this structure simply intensifies the vascular reaction in the uterine placental area and neither alters the nature of this reaction nor the character of the response in the substance of the uterus generally the effect produced by the contact stimulus of the placenta is of no interest to us at present. As far as gestation itself—whether uterine or extrauterine—is concerned, there can be no doubt that the initial and all important maternal response is the vascular one to which I have just referred, but the uterus which harbors a product of conception must not only nourish but must rid itself eventually of this body, and the reaction which fits the uterus for this great mechanical work is of much physiological interest.

The stimulatory action of the oosperm is through the vessels of the uterus transmitted not only to the different cellular elements of this organ, but to the cellular elements of correlated organs and structures, and in all of these fresh activities are thereby aroused. In the musculature cells of the uterus and in the secretory cells of the mammary glands the results of these activities are tangible and apparent to all. In the case of the musculature cells of the uterus, the diosmotic properties of these physiological units become so altered that anabolism exceeds catabolism, and it is this alteration in the metabolic processes of these elements which is chiefly accountable for that enormous increase in the bulk and weight of the uterus which takes place in consequence of uterogestation. It is very noteworthy that this remarkable diosmotic activity is as effectively operative when induced and continued by the vital stimulus of an hydatid mole as when aroused and maintained by the stimulatory action of a healthy oosperm. The character of the influence is to all intents and purposes the same in both cases, hence we conclude it is the nature or quality and not the intensity of the stimulus which is accountable for the manifestation of this peculiar diosmotic phenomenon. It is not, however, awakened by any other kind of embryonic life for the embryo of the *Tænia ecchinococcus* may burrow into and develop in the wall of the uterus, but the vital stimulus of that organism fails to arouse in the uterus any semblance of that activity which invariably results from the stimulatory action of an oosperm.

On the other hand in "missed," or as I prefer to call it, "postponed abortion," where the fœtus, perishing at an early stage of its existence, is thereafter inertly retained for weeks or months in the uterus, it is a remarkable fact that the anabolic activity becomes interrupted immediately the embryo dies, and as long as this product of conception occupies the uterus the latter neither increases nor decreases in size, but remains in this unstable state of equilibrium until the product of conception is got rid of. It is altogether immaterial whether this is effected naturally or artificially, but when it is accomplished the catabolic process forthwith claims ascendancy and continues supreme until the dissolutionary changes consequent upon abortion are completed. When

thus the uterus is restored to its original state of equilibrium, then the anabolic and catabolic processes again counterbalance each other.

From such facts we are justified in concluding that the excessive anabolic activity which we are now considering is a manifestation which is dependent upon the vital activity of the germ mass. The accumulation of material in the musculature protoplasts takes place because the avidity of these units has been augmented and altered and because some of the endosmosed substances are reconstituted and converted into nondiosmosing or insoluble compounds immediately they enter the cells. This is a unique phenomenon and the resulting increase is neither of the nature of a hyperplasia nor due to a resuscitation of growth, for already the uterus had attained its adult state and, moreover, there sooner or later comes a time, a time consequent upon the occurrence of abortion or parturition, when the accumulated and nondiosmosing materials must undergo another rearrangement and entering into solution must again pass out of the cells. There is now a reversal of the metabolic activity and catabolism not only exceeds anabolism, but continues to assert its supremacy until the uterus is restored to its original state of equilibrium, and thereafter the anabolic and catabolic processes once again counterbalance each other. Under ordinary circumstances the dissolutionary changes consequent upon the occurrence of abortion or parturition are so rapidly completed that in four and six weeks after these events respectively the uterus is again fit not only for menstruation, but for gestation. Occasionally after what appears to have been a perfectly normal full time gestation and parturition, but never, as far as my experience goes, after an abortion, it happens that the excessive catabolic activity, instead of being intercepted at the proper time, transcends the usual limit, and in consequence of this blunder the utility of the uterus is forever afterwards annulled. The atrophy which thus results proceeds so rapidly that in four months the uterus may be reduced to less than half the size of an adult virgin organ, although it takes four years before a like reduction in the size of this organ is observed in consequence of a natural menopause.

Organic chemistry has done much to elucidate the nature of the materials concerned in metabolism, but our knowledge of the metabolic processes themselves is still very meagre. There is a growing disposition to attribute all phases of metabolic activity to the influence of enzymes, but judging from clinical facts, there is every reason to believe that the excessive metabolic activity displayed by the pregnant uterus occurs independently of any transference of material from the oosperm to the maternal tissues and independently also of the formation of any fermentlike body in the latter. Fresh activities are in the first instance awakened in the endothelial cells of the uterine capillaries, because these cellular elements perceive and respond readily to the molecular changes engendered in the ovum by fertilization. This phenomenon is in a measure comparable with that whereby iodide of nitrogen, the formation of which is analogous to nitrogen trichloride, explodes readily when acted upon by certain periodic movements, by wave motions of a definite length and velocity. In both the result depends upon the peculiar quality of the operating agent, as well as upon the inherent properties and characters of the body acted upon.

As already observed, the initial and all important maternal response to the stimulus of the oosperm is the vascular reaction, and without a progressively increasing supply of blood to the pregnant uterus the process of anabolism could not exceed that of catabolism, but the greatly augmented blood supply is merely a concomitant and not a cause of the altered metabolism. Taking all things into consideration, it seems probable that the excessive anabolic activity displayed by the musculature cells of the pregnant uterus is caused by the kinetic energy transmitted from the capillaries, for when the germ mass perishes the capillary energy is suspended and the anabolic activity is interrupted. When again abortion or parturition takes place the supremacy of the metabolic process is reversed because of a strong inherent disposition on the part of the uterus to revert to its original state of equilibrium.

As long as the uterus is occupied by a product of conception menstruation is held in abeyance, and in the ordinary course of events parturition may be expected at any time between the 260th and the 285th day after the date of the cessation of the last menstrual discharge, but without any apparent reason the pregnancy may be more or less abruptly terminated at any time. When, however, it becomes expedient to endeavor to cause the uterus to expel a product of conception which is still actively progressing, the greatest difficulty may be experienced in bringing about this result. The most reliable method is to introduce and leave for a greater or less length of time a solid bougie between the fœtal sac and the uterine wall. By this means we so overexcite the uterus that this organ becomes intolerant of and expels its occupants. Here the operating agent imparts nothing to the uterus. An ecbolic is a substance which is supposed to exert such a direct chemical influence upon the pregnant uterus that the latter is thereby induced to expel its contents. There is, however, no known drug which acts thus. All the reputed ecbolics are toxic agents, for which the uterus has no peculiar avidity, and when any of these chance to exert what appears to be an ecbolic action, it only influences the uterus indirectly and in virtue of some constitutional derangement which it causes. Ergot is probably, of all chemical agents, the drug which is credited with ecbolic power, but even this drug, when advisedly administered, is powerless to hasten the advent of labor or provoke abortion. It is, moreover, well known that reputed ecbolics sometimes kill the mother without abortion resulting. The anabolic activity of the pregnant uterus cannot be arrested by the administration of any known chemical substance.

Softening of the cervix and a patulous condition of the os uteri are important associations of uterine pregnancy. So, too, is a change in the cellular elements of the vagina in conjunction with a general increase in the vascularity of this tube. In some remarkable way these changes are dependent upon the

anabolic activity of the uterus itself, and on this account they are never noted during the evolution of an extrauterine pregnancy.

In consequence again of the vital stimulus of a germ mass wherever this body may be located, whether in the uterus or in some other structure, we note that fresh activities are awakened in the mammary glands and in the skin constituting the areolæ about the nipples. As early as two weeks after the first suspended menstruation following upon fertilization the breast signs which are concomitants of pregnancy may be so apparent and so pronounced as to be considered very reliable corroborative evidence of the probable physiological cause of the amenorrhœa. During the first two or three months at least and in some cases even throughout the existence of a hydatid mole in the uterus the manifestations of activity about the breasts are as evident as though they depended upon the influence of a normally developing oosperm. On the other hand, in cases of missed or postponed abortion the activities which had been awakened in the breasts by the stimulatory action of the oosperm become arrested immediately the embryo dies, and rapidly thereafter, as a rule, the mammary glands revert to their original quiescent state in spite of the fact that the dead ovum continues for weeks or months to occupy the cavity of the uterus. The same condition obtains in extrauterine pregnancy, when the product of conception perishes and is not removed from the mother's body, and this notwithstanding that complete disintegration and absorption of the soft and unossified structures of the embryo or fœtus takes place *in situ*. It is extremely probable, therefore, that the activities awakened in the breasts, like those aroused in the uterus and for that matter in any vicarious ovigerous chamber, are dependent solely upon the stimulatory action of the oosperm, and as the vascular change is the only reaction occurring in the natural and vicarious chambers, which is the same in both, we are justified in concluding that the breast changes observed during pregnancy are due to the stimulus of the oosperm transmitted through the maternal vessels. The mammary glands in the human female, although conveniently divorced from, are nevertheless physiologically continuous with, the reproductive organs, and correlating influences pass, in my opinion, from one set of organs to the other through the vessels. When, therefore, through the stimulatory action of an oosperm, normal or abnormal, and wherever this body may be located, whether in the ovary, the Falloppian tube, or the uterus, the permeability of the capillaries in the ovigerous chamber is increased; so, too, the permeability of the mammary capillaries becomes augmented and the energy thus aroused in the endothelial cells of these vessels awakens in the breasts generally those activities which are so characteristic of pregnancy. In conclusion I venture to hazard the opinion that, while the germ mass at all stages of its existence abstracts from the mother all the materials which it requires for its development and growth, yet under normal circumstances the only waste product of the embryo or fœtus which the mother is called upon to eliminate is carbon dioxide, because the product of conception until the fœtus is mature is endowed with such resynthetizing powers that it is enabled to reassimilate over and over again its own by products. If this is so—and there is evidence that it is so in the case of the chick in the egg—then no material passes from the embryo or fœtus under ordinary circumstances except carbon dioxide, and for this reason the urine of the pregnant woman differs in no essential from that of any adult virgin.

18 Gordon Square, W. C.

TUBERCULOSIS.

An Advance Copy and a Resolution.

By E. C. Schroeder,
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AN ADVANCE COPY.

Among those who are interested in the relation of bovine tuberculosis to public health it has been quite generally known that Dr. William H. Park, director of the Research Laboratories of the Health Department of New York, and his associates were making careful, systematic studies of the types of tubercle bacilli currently found in human tuberculous lesions. Hence, the announcement that Dr. Park would present a paper before the Pathological Section of the National Association for the Study and Prevention of Tuberculosis on May 3, 1910, entitled, Types of Tubercle Bacilli Found in Human Tuberculosis and Their Relative Significance, aroused widespread interest. It was sincerely believed by many tuberculosis investigators that we would obtain authoritative data which, even though they did not wholly solve the problem, would throw clear light on the percentage of human tuberculosis certainly chargeable to the bovine source of infection.

On May 2, 1910, I was given what purported to be an advance copy of the paper Dr. Park would present the following day. This advance copy was handed me by one of the registration attendants of the National Association for the Study and Prevention of Tuberculosis, and as far as I have been able to learn was prepared somewhere within the association and was distributed by it as an authorized document. On first view the advance copy seemed to be typewritten; on closer inspection it was found to be printed. As I wish to speak about it in detail I will give its precise text, which follows:

An Advance Copy.

Released for publication after 12 o'clock noon, May 3, 1910.

Abstract of paper by Dr. William H. Park and Dr. Charles Krumwiede of New York on "Types of Tubercle Bacilli found in Human Tuberculosis and their Relative Importance," before the Pathological Section of the National Association for the Study and Prevention of Tuberculosis, Washington, D. C. May 3rd, 9.30 a. m.

That only 2½ per cent. of all tuberculosis in New York city comes from infected milk, butter, or meat, that is, from bovine sources, was the claim advanced by Dr. Park. This small percentage, moreover, is found mainly in children. In other words pulmonary tuberculosis among adults is contracted solely from human beings, and is not the result of impure milk or food.

Dr. Park supported throughout his paper the contention advanced by Dr. Robert Koch, of Berlin, the discoverer of the tuberculosis germ, before the International Congress

on Tuberculosis in Washington, 1908, when he stood practically alone in declaring that cattle did not transmit pulmonary tuberculosis to human beings. Dr. Park's conclusions show that out of 297 adults over sixteen years of age examined in the research laboratories of the New York City Department of Health, only one showed tuberculosis of the bovine type, and that was simply a slight infection of the kidney. 278 out of the 297 suffered from tuberculosis of the lungs in a fairly advanced stage, and of these not one showed a sign of bovine infection.

Out of fifty-four children between the ages of five and sixteen, forty-five showed the human type of tuberculosis and only nine the bovine, showing that even in this class the chief source of infection was from one human being to another, and that the danger from tuberculous milk or butter was comparatively slight.

Even in the cases under five, examined by Dr. Park and his assistants, out of eighty-four individuals, sixty-two showed the human type and twenty-two the bovine. Out of forty fatal cases of infants, in thirty-six, tuberculosis was of human origin and in only four from bovine sources. Out of a total of 436 tuberculous persons of all ages examined in only 2½ per cent. was their disease due to infected bovine products.

The significance of these conclusions, it was pointed out, will be to direct all the energy of the campaign against tuberculosis to combating the spread of this disease among human beings, by preventing spitting, bad housing, overwork, and other conditions bad for the health

Dr. Park showed how the experiments had been carried on, and said that in only three instances was there any question as to the type of bacillus. He said: "We have seen no proof that the bovine type changes in man to the human type, or that the human type changes in calves to the bovine type."

Dr. Park was assisted in the preparation and presentation of his paper by Dr. Krumwiede, Dr. Anthony, and Dr. Grund.

On May 3rd, after hearing the paper on which this advance copy is based and of which it is stated to be an abstract, I went to Dr. Park and asked him how it happened that he did not draw the same conclusions in his paper that were given in the abstract of it, and then showed him the advance copy. Dr. Park looked at the purported advance copy and said that he had not seen it before, that he was without knowledge of its existence, that it was issued without his consent or authority, and that it contained conclusions with which he did not agree. In plain language, in the presence of several witnesses, Dr. Park repudiated the advance copy of his paper which was evidently distributed by the National Association for the Study and Prevention of Tuberculosis.

In the first paragraph of the repudiated, unauthorized advance copy the statement is made that "only 2½ per cent. of all tuberculosis in New York city homes . . . from bovine sources."

If we read on we find the data on which this statement is based, so that it is a simple matter to use the data in the advance copy itself to construct a table which will show at a glance that the real danger to which public health is exposed through the use of food products from tuberculous cattle is nearly three times 2½ per cent. (See Table I.)

TABLE I.

Table showing types of tubercle bacilli found by Dr. Park, Dr. Krumwiede, Dr. Anthony, and Dr. Grund in cases of human tuberculosis in the city of New York, constructed from what purported to be an advance copy of Dr. Park's paper read on May 3, 1910, before the Pathological Section of the National Association for the Study and Prevention of Tuberculosis.

Ages of tuberculous individuals.	Human types.	Bovine types.	Percentage of bovine types.
Persons sixteen years old and older	296	1	0.33
Persons from five to sixteen years old	45	9	16.66
Persons under five[1] years old	62	22	26.19
Total	403	32	7.12

In the fourth paragraph of the advance copy the statement is repeated that "only 2½ per cent." of human tuberculosis is due to bovine infection. Just how this percentage is obtained is something of a mystery, because the advance copy itself shows that 435 cases of human tuberculosis were examined and that thirty-two of this number were found to be due to bovine types of tubercle bacilli, and thirty-two is 7.12 per cent., and not 2½ per cent. of 435.

To show conclusively that the error is not due to mistakes made in recording the data in the advance copy that was obtained from Dr. Park and his associates, the two following tables are given, which explain themselves.

TABLE II.

Table showing the types of tubercle bacilli found by Dr. Park, Dr. Krumwiede, Dr. Anthony, and Dr. Grund in cases of human tuberculosis in the city of New York, as reported by Dr. Park at the meeting on May 3rd, 1910, of the National Association for the Study and Prevention of Tuberculosis. (From notes taken during the presentation of Dr. Park's paper.)

Character of tuberculous disease.	Persons sixteen years old or older.		Persons five to sixteen years old.		Persons under five years old.[1]	
	Human types.	Bovine types.	Human types.	Bovine types.	Human types.	Bovine types.
Pulmonary	278	0	8	0	5	0
Cervical adenitis	10	0	23	8	6	12
Generalized	2	0	1	0	13	5
Generalized with meningitis	0	0	1	0	32	2
Bones and joints	1	0	10	0	6	0
Abdominal	1	0	1	1	0	3

The total number of cases included in this table is 429, of which 398 were found to be associated with the human type of tubercle bacillus and thirty-one with the bovine type; hence, of all the cases examined, 7.22 per cent. were found to be due to bovine tubercle bacilli.

The cases of tuberculosis recorded in this table are the same as those recorded in Table III, with the addition of seventeen cases not included in Table III.

TABLE III.

Table showing the types of tubercle bacilli found by Dr. Park, Dr. Krumwiede, Dr. Anthony, and Dr. Grund in cases of human tuberculosis in the city of New York, as reported in the *Bulletin of the Johns Hopkins Hospital*, xxi, No. 229, April, 1910.

Character of tuberculous disease.	Persons sixteen years old or older.		Persons five to sixteen years old.		Persons under five years old.[1]	
	Human types.	Bovine types.	Human types.	Bovine types.	Human types.	Bovine types.
Pulmonary	277	0	8	0	5	0
Cervical adenitis	9	0	19	7	5	11
Generalized	2	0	1	0	13	5
Generalized with meningitis	0	0	1	0	31	1
Bones and joints	1	0	10	0	6	0
Abdominal	0	0	0	0	0	0

The total number of cases included in this table is 412, of which 388 were found to be asso-

[1]Includes forty cases of fatal tuberculosis in infants, four cases or ten per cent. of which were due to the bovine type of tubercle bacillus.

ciated with the human type of tubercle bacillus and 24 with the bovine type; hence, of all the cases examined, 5.82 per cent. were found to be due to bovine tubercle bacilli.

Dr. Welch, of Johns Hopkins University, called attention to the fact that the cases of tuberculosis examined by Dr. Park and his associates were not cases specially picked to show that bovine types of tubercle bacilli may cause human tuberculosis.

The tables show that the percentage of human tuberculosis due to the bovine source of infection is much larger than most conservative estimates warranted us to believe, and the following discussion of a paper read by Dr. Theobald Smith, at the same meeting of the National Association for the Study and Prevention of Tuberculosis at which Dr. Park read his paper, indicates that we cannot say with certainty that the full danger to which public health is exposed through the use of food products from tuberculous cattle is shown by the high percentage derivable from the work of Dr. Park and his associates.

In discussing Dr. Smith's paper, which dealt with the reaction curve obtained by growing tubercle bacilli in glycerin bouillon, Dr. Park said that "ten per cent. of the cultures of tubercle bacilli he classified as human types in his paper gave the bovine reaction curve in glycerin bouillon." To explain this phenomenon Dr. Smith said that "the ten per cent. of cultures in question may represent aberrant forms of bovine tubercle bacilli that have been altered by retention in the human system."

I presume that we must not lay too much stress on the extemporaneous remarks made by investigators when they are discussing technical questions which have been unexpectedly brought to their attention, otherwise Dr. Smith's explanation should lead us to conclude that he now believes in the transformability of tubercle bacilli through the influence of environment from one type to another type. Apart from this, however, since Dr. Smith continues to give the reaction curve in glycerin bouillon great importance as a means for distinguishing between human and bovine types of tubercle bacilli, we should not overlook the statement made by Dr. Park, or dismiss it lightly as having no special significance, because, if ten per cent. of the tubercle bacilli classified by him as human types showed the bovine reaction curve, and, as he also stated, all the cultures classified as bovine showed the bovine reaction curve, we have the right to draw one of two conclusions, as follows: Either Dr. Park used special care to keep the percentage of cultures classified as bovine types down as low as he reasonably could, or he found a larger percentage of types of tubercle bacilli that should be classified as intermediate or transition forms than his paper shows.

The three tables which have been presented show, though less than one per cent. of tuberculosis among adults is associated with bovine types of tubercle bacilli, that more than one quarter of all tuberculosis among children under five years must be charged to the bovine source of infection; hence, if we accept the evidence various investigators have supplied to prove that tubercle bacilli are not constant in their types and virulence, and bring this to bear on the ten per cent. of tubercle cultures from human tuberculosis which Dr. Park classified as human types, notwithstanding that they gave the bovine reaction curve, and keep in mind that the percentage of perfect bovine types of tubercle bacilli found in human tuberculous lesions decreases directly as the ages of the infected persons increase, we have the right to pronounce an indictment against raw milk from tuberculous cows which stamps it as a serious disease producing agent.

Let us now turn to the fifth paragraph in the advance copy, which directs how and where "all the energy of the campaign against tuberculosis" shall be expended, and which absolutely ignores the bovine source of infection for children as well as for adults.

I specially brought this paragraph to Dr. Park's attention and he specifically denied its conformity with his views. Compare the repudiated paragraph with the following, which is copied verbatim from the résumé in the *Bulletin of the Johns Hopkins Hospital* which supplied the data for Table III.

"In infants and young children, however, bovine infection causes many deaths and deserves that we give serious consideration to its prevention. This can best be done by safeguarding the milk and butter supply of young children."

This quotation, I have good reasons to believe, expresses the conclusion from Dr. Park's work which he is willing and prepared to indorse.

The spurious paragraph under discussion was widely published in the daily newspapers and also appeared, only slightly altered, in the *Survey*, a journal devoted to social, charitable, and civic matters, on May 14, 1910, and again in the *Journal of Outdoor Life*, for June, 1910.

A Resolution.

During the last meeting of the National Association for the Study and Prevention of Tuberculosis six resolutions relative to the pasteurization of milk were indorsed. About the first five of the resolutions I do not care to say anything, but the sixth, because it seems to have been shaped by the same elements that gave the advance copy its objectionable character, requires a little attention.

The resolution reads as follows:

"Resolved, That in the opinion of this association it has been proved, apparently, that a small percentage of the cases of nonpulmonary human tuberculosis, especially tuberculosis of the lymph nodes in children under five years of age, is due to infection by tubercle bacilli of bovine origin."

I would like to know what the object of the word "apparently" following the words "it has been proved" is. Is the National Association for the Study and Prevention of Tuberculosis ignorant of the work done by the German Imperial Tuberculosis Commission, the British Commission on Human and Animal Tuberculosis, and numerous responsible and widely recognized independent investigators? Is the word "apparently" either reasonable or serviceable excepting it is designedly used to divert attention from one important and absolutely proved source of tuberculosis, the source most easily controlled? Is the life and health of one quarter of the children under five years who contract tuberculosis of so little consequence that the

cause of their death and disease can be dismissed with the word "apparently"? Or is the great National Tuberculosis Association of this country taking the position that bovine types of tubercle bacilli in human tuberculous lesions show nothing conclusive? Are we to be asked shortly to believe that human types of tubercle bacilli can be converted into bovine types in human tissues, especially in the tissues of children?

Let us not forget that honesty, even in a tuberculosis campaign, is a principle we cannot afford to ignore.

A METHOD OF EXAMINING SPUTA FOR TUBERCLE BACILLI.*

By Edward H. Goodman, M. D.,
Philadelphia,

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(From the Private Laboratory of Dr. John H. Musser.)

Although the diagnosis of pulmonary tuberculosis depends by no means on the finding of tubercle bacilli in the sputum, yet their presence is generally recognized as being indicative of an undoubted tuberculous lesion. Sputum examinations, as generally practised, are ofttimes of doubtful aid in the proper study of the case in question, on account of the difficulties attending the customary search for the organism. The sputum may be so stringy and so mucoid that the procural of suitable particles is difficult; the typical bacilli nests may be so hidden in a thick, clumpy mass that their detection is impossible, but the main difficulty is that there may be only a few scattered organisms in the entire twenty-four hour quantity of sputum. It is evident that the probability of a platinum loop withdrawn from such sputa, containing any bacilli, is very remote. In cases of tuberculosis, in which the sputum is liberally sown with organisms, a platinum loop is productive of as good results as is any other method, but in cases in which from the nature of the condition, one suspects but scattered bacilli it must not be relied upon.

The aim of laboratorians for years has been to convert the sputum into a homogenous mass, of a thin, liquid consistency, from which the organisms might be thrown down in a compact mass, in other words, the sputum made richer in tubercle bacilli.

That methods in large numbers have been proposed is seen by consulting a paper on the subject by Beitzke (1) and that their worth has not been subsequently proved is also learned from that author. Since 1902, many methods have been suggested, but the most interesting communications are from Ellermann and Erlandsen (2 and 3) who discovered that by means of an original method tubercle bacilli could be regained quantitatively in sputum and urine. I have tried this method in a few cases but have found it so complicated and tedious that its use routinely is out of the question.

In a paper before the Tuberkulose-Aerzte Versammlung in Berlin, Uhlenhuth (4) described a simple method of examining the sputum, using a patented fluid as an enriching agent. The results obtained with this were brilliant, and were later confirmed by many authors, namely: Hüne (5), Meyer (6), Haserodt (7), Seemann (8), Thilenius (9), and others. In the fall of 1909 I made a series of observations which satisfied me as to the usefulness of Uhlenhuth's method.

The solution brought into such prominence by Uhlenhuth is said by that writer to be nothing but eau de javelle plus sodium hydroxide. He says, however, that it is prepared by decomposing calcium hypochlorite with soda, which would make a solution of sodium hypochlorite, whereas eau de javelle is potassium hypochlorite. This error has been freely quoted by subsequent writers. The patented solution according to Uhlenhuth should contain about 5.3 per cent. available chlorine and from five to ten per cent. sodium hydroxide. On analysis I found 4.86 per cent. available chlorine and 2.94 per cent. sodium hydroxide.

Since Labarraque's solution, which, as is well known, is a solution of sodium hypochlorite, is said to contain approximately 2.53 per cent. available chlorine, it remained but to increase the chlorine content and to add sodium hydroxide in order to obtain a solution similar to the patented one. Instead of using seventy-five grammes of chlorinated lime, 150 grammes were employed, and to the final solution thirty grammes of sodium hydroxide were added. This solution represents approximately 6.57 per cent. chlorine and three per cent. sodium hydroxide.

The technique employed for making the enriching solution was that given in the U. S. Dispensatory and was as follows:

150 grammes of calcium hypochlorite are thoroughly triturated with 200 c.c. water added gradually, until a uniform mixture results. After standing a short while to allow the heavier particles to subside, the supernatant fluid is filtered off,—the residue is treated with 200 c.c. water and the whole is transferred to the filter and when the liquid has filtered off, the residue is washed with 100 c.c. water.

150 grammes of sodium carbonate are dissolved in hot water and added to the above obtained filtrate. The mixture is thoroughly stirred, and if it should become gelatinous, it is warmed until the contents become liquefied. The whole is transferred to a new filter and when the fluid has filtered off, the residue is washed with enough water to make the product weigh (measure is accurate enough) 1,000 grammes (1,000 c.c.). Thirty grammes of sodium hydroxide are now added and the mixture kept in brown bottles with rubber stoppers and protected from the light.

The resulting fluid is colorless, with a faint odor of chlorine. On the addition of hydrochloric acid there is an evolution of carbon dioxide with the liberation of chlorine, imparting a suffocating odor to the mixture. The fluid is freely soluble in water.

Available chlorine, ...6.57 per cent. (approx.):
Sodium hydroxide, ...3 per cent.

It will be seen that the solution is really Labarraque's solution except that instead of 75 grammes chlorinated lime, we have used 150 grammes, and in addition our solution contains sodium hydroxide.

*Read before the Pathological Society of Philadelphia, May 12, 1910.

It is to the action of the chlorine and the sodium that its dissolving properties are ascribed.

Method of application. The sputum we poured into a small beaker and to it was added an equal amount of the solution. The whole was thoroughly mixed with a glass rod, and put on a boiling water bath. After the sputum had become a homogeneous mass (from fifty to twenty minutes) it was removed from the water bath, a small amount of water added, and the whole was centrifugated for five minutes in an electrically driven centrifuge. If more than one tube was used the supernatant fluid was poured off and the sediments combined, washed in the centrifuge with physiological salt solution for three to five minutes, the excess poured off, and the residue smeared on a slip by means of a platinum loop. The specimens were stained in the usual manner.

The technique, as described, can be varied to suit the equipment of the laboratory. The sputum will dissolve readily at room temperature in a comparatively short time, if equal parts of the solution are used. The length of time the sputum is allowed to digest seems, up to certain limits, to be without effect on the tubercle bacilli. We have allowed the sputum solution mixture to remain eighteen hours in the incubator at 38° C., and have recovered the tubercle bacilli in great numbers. Solutions of ten and twenty per cent. strength have been tried and while they dissolve all mucus and solid particles well, it seems from our experience, that full strength of the solution gives more uniform results.

The method, as described, varies in but few particulars from that of Uhlenhuth (10). Comparison of the new solution and of the patented solution, as to their dissolving properties was made, and practically no difference could be noted. Apart from avoiding the necessity of using a patented substance, the new solution has the advantage of being about one fourth as expensive as the former. It is easily made in any laboratory, and where facilities do not permit of this, it may be made by a druggist.

The results of our experience with the "home made" solution have been most satisfactory. While we have not been fortunate in receiving sputa which contained no tubercle bacilli with the old method of examination, yet we find so many more bacilli after using the solution, with subsequent centrifugation, that there is no reason to believe the technique will not disclose the presence of a few scattered bacilli which escape the platinum loop method. We recommend, therefore, the new solution on account of its easy preparation and cheapness, and on account of avoiding the necessity of using a proprietary preparation.

In conclusion I wish to express my thanks to Dr. H. R. M. Landis for placing at my disposal the material of the Phipps Institute.

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248 South Twenty-first Street.

Our Readers' Discussions.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

XCIX.—How do you treat gonorrhœa in the male? (Closed June 15, 1910.)

C.—How do you treat œdema of the lungs? (Answers due not later than July 15. 1910.)

CI.—How do you treat chronic nasal catarrh? (Answers due not later than August 15, 1910.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED*) that the answers be short; if practicable no one answer to contain more than six hundred words.*

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The prize of $25 for the best essay submitted in answer to question XCVIII was awarded to Dr. Michael Schuman, of New York, whose article appeared on page 1338 of volume XCI.

PRIZE QUESTION XCVIII.

THE PREVENTION OF THE SPREAD OF SCARLET FEVER.

(Continued from xci, p. 1340.)

Dr. D. D. Neff, of Syracuse, N. Y., remarks:

The method that I have employed for preventing the spread of scarlet fever is the following: The wage earners are directed to take a bath, shampoo their heads, and to dress in clean clothes that have been fumigated with formaldehyde gas, after which they are to take up their abode elsewhere until the house is free from scarlet fever. The house is placed under quarantine and none are allowed to enter or leave the premises until the removal of the quarantine.

A large and easily ventilated room remote as possible from the living and sleeping rooms of the rest of the family is chosen for the patient and nurse. The floor is made bare, all pictures, cards, curtains, draperies, and movable articles are taken from the room. Two beds or cots, metal if possible, one or two plain wooden chairs, a plain deal table, furnish the room with the necessary bedding and bedclothes. In this room the patient and attendant remain until the termination of the disease.

A sheet is tacked along the top and down the side of the door frame opposite to that on which the door is hung leaving the bottom and other edge of the sheet free, any other doors should be plugged with

cotton and fastened shut. All dishes, knives, forks, and spoons used in the room are washed and kept in the room. Dishes on which food is brought to the patient and nurse are immediately emptied of their contents by the nurse whose hands have been properly disinfected and placed in a pan of boiling hot water outside of the door whence they are taken to the kitchen and boiled before being washed.

Newspapers torn into bits and wet with a 1 in 1,000 bichloride solution or a five per cent. carbolic acid solution are thrown on the floor daily which is then swept. Waste water, fæces, urine, and pathological discharges are disinfected with either of the before mentioned solutions and emptied in a slop bucket kept outside of the door in which some antiseptic solution is constantly kept. The patient is bathed daily with soap and water and anointed with oil which prevents the scales from flying about the room.

When the physician makes his visit he puts on a long, washable gown which closes tightly at the neck and wrists, leaves his hat on his head while in the patient's room. After the visit he washes his hands with soap and running water drying them on a clean towel.

When desquamation is completed and pathological discharges, if there have been any, cease the patient is given a bath, the head shampooed, and the patient is dressed in an entire change of clean clothing and removed from the room. The nurse does the same for herself. The room and contents and the entire house when possible are fumigated with formaldehyde gas.

Adults exposed to the contagion of scarlet fever are kept under observation for from twelve to fourteen days and children are placed in provisional quarantine for the same period. Books, papers, etc., taken into the sick room are finally disposed of by burning. If the patient has been attending school the books, pencils, and paper are destroyed and the school room fumigated.

Dr. L. B. Hill, of Seymour, Md., states:

To prevent the spread of any contagious disease there must be unison of action on the part of the attending physician, the family infected, the health officer, and the community in which the contagion exists. The physician must be competent and conversant with every detail of prevention of contagion and infection, and he must be explicit in his instructions. The family and nurse must be faithful in the observation of his instructions. The health officer must inform the public, and establish strict quarantine, and the community must observe strictly all quarantine regulations. The whole subject is encompassed within the confines of isolation and disinfection. Scarlet fever, although only air borne to a limited extent, is contagious before, during, and after desquamation of the skin has entirely stopped.

Having diagnosticated a case of scarlet fever, no difference how mild the symptoms may be, the patient should be isolated at once, and placed in charge of a trained nurse or an intelligent attendant. An upper room, if the house is more than one story, as far as possible removed from other living rooms, should be selected; and it is desirable that it has an east and south front. From every viewpoint such a room will be an advantage to the patient, and the other members of the family can be more readily prevented from coming in contact with the patient. All unnecessary articles of furniture, clothing, bric-à-brac, hangings, etc., should be removed; only plain and necessary furniture remaining, plain blinds at the windows; and the floor, if not hardwood, should have linoleum upon it. For the comfort of the attendant and patient when convalescent, two small rugs may be in the room. In these quarters the vigilant purpose should be to have as little as possible to destroy or disinfect when the case has ended, and provide attendant and patient with all that is necessary for their comfort. It is very desirable to have a suite of rooms as the isolation quarters, especially when they are on an upper floor.

No one, except the attending physician, is permitted to enter the patient's quarters while in quarantine. Whatever is needed in the sick room is placed on a table in the hall or in an adjoining room, by the outside attendant. The nurse opens the door and gets same when outside attendant has gone. Whatever utensils or other articles are removed from the room are placed in a receptacle containing a disinfectant and this receptacle placed outside the room, and they are then taken by outside attendant and thoroughly boiled. The attendant is provided also with bichloride solution, and uses it liberally in all containers of evacuations which are closed by lid before removal.

The case having ended by recovery or death, all articles which have come in contact with the patient must be destroyed or thoroughly disinfected.

Recovery occurring, the nurse and patient, after taking disinfecting baths, step into the anteroom of their quarters, and don aseptic clothing, placed there by the outside attendant. The nurse may previously arrange for the disinfection of their quarters, by placing bedding on chairs, opening closets, dresser drawers, etc., pasting paper over all crevices and openings, and close doors and windows. Otherwise health officer must do same.

The physician must be satisfied beyond a reasonable doubt that the patient has no aural or nasal discharge, and that the throat and eyes are in a healthy condition, before he recommends raising quarantine. Some close observers seriously doubt whether the desquamative cuticle ever derives its infective properties through the skin, but from the secretions mentioned previously, and the desquamative cuticle simply becomes a carrier of the contagious secretions. The room should be disinfected by mixing one quart of a forty per cent. formaldehyde solution and six and a half ounces of potassium permanganate in a porcelain vessel placed in a tub of water and closing the room. This amount is sufficient for an average sized room. The room must remain closed ten hours, then thoroughly aired. The contents of the room are then aired and sunned, the woodwork is washed and repainted, and the walls repapered or calcimined.

In the event of death, the body is to be enveloped in a sheet saturated with a powerful disinfectant (mercuric chloride in solution 1 to 500 being efficient), then placed in an airtight coffin, sealed, and

removed for interment in twenty-four hours. Burial must be private.

Developing in a school or place of public assembling the same must be closed at once, and thoroughly disinfected. On reopening school, each child should be inspected by a competent person, and every child found in any manner indisposed, sent home and the parent or guardian instructed to consult a physician. No child should be permitted to leave an infected home until quarantine is raised. If cases are numerous, the schools and places of assembling should be closed, and the children should be forbidden to leave their homes until the epidemic has abated. It is discreet to isolate, or provisionally quarantine, each case in which we find fever, sore throat, foul breath, or coated tongue until positive of our diagnosis.

Parents must be impressed with the danger of neglecting slight ailments in their children at all times, and especially when epidemics prevail.

The control and suppression of contagious diseases is largely a matter of education of the masses. The people must be impressed with the fact that it is a very dangerous contagious disease, and informed of all the ways in which the contagium may be conveyed; that mild cases are as liable as the more severe to convey the disease, and that virulent epidemics may arise from mild cases of so called scarlet rash; that every case of sore throat and fever should be cautiously handled until its innocent character is established beyond a reasonable doubt; that every case of scarlet fever must be as promptly and completely isolated as smallpox; that cats and dogs or other pets must not be permitted to come in contact with the patient or anything the patient may have touched, for they become distributing agents of the contagion; that children must be prevented from roaming the streets, but permitted plenty of exercise and fresh air at their own homes.

The physician must be vigilant in not spreading the disease as he goes into other homes. On entering a quarantined home, or where contagion may be, he must remove his coat and hat, and put on a cap and gown previously saturated with bichloride solution, brought with him in a valise used for the purpose. On retiring from the room remove cap and gown and wash hands and face with an antiseptic soap and alcohol, before putting on hat and coat. Before entering another home, or attending patients in office, he should thoroughly disinfect, by generating chlorine gas by placing a drachm of chloral hydrate in a saucer and adding a small quantity of hydrochloric acid. Place the dish on the floor, and stand over the vapor. It destroys any germs which might lurk about the person or clothing.

There are experiences and observations I have had in practice and as health officer, which I should like to relate; but my paper is now too long, and in conclusion I would like to say:

Whatever course we pursue it should be thorough. Measures ever so good, when half done, give only a fancied security. The more promptly we act, the surer we are to succeed. When in doubt act on the safe side. Isolation and disinfection should be our watchwords in preventing the spread of scarlet fever.

(To be continued.)

Correspondence.

LETTER FROM LONDON.

Meeting of the Research Defense Society.—Bogus Nursing Homes.

London, *June 15, 1910.*

The annual meeting of the Research Defense Society was held at the Royal College of Physicians on June 3rd. Lord Cromer, the president, was in the chair. The chairman of the committee, Mr. Sydney Holland, read the annual report. He stated that the number of members had steadily increased, there being now about 3,200 members besides 160 associates, being an increase of 800 during the year. There were now active branches in most of the principal towns, and others were in the course of formation. During the year sixty addresses and lantern lectures had been given in London and elsewhere by the members of the society. A new series of popular leaflets, entitled *The Truth about Vivisection*, had been sent out to their associates. A further series of popular leaflets for general distribution was in course of preparation; two had already been published.

Reference was made to the fact that the Antivivisection societies had lately opened shops in public thoroughfares in London and other towns. These shops were used to obtain signatures for petitions and to advertise Antivivisection meetings. Sir Douglas Powell, proposing the adoption of the report, said he thought it deplorable that the society should be necessary in order to defend the good works of a great profession against the machinations of a clique of people who for the moment dominated and misguided another association. It was only within comparatively recent years that the Society for the Prevention of Cruelty to Animals, which had done and was doing great service in ameliorating the conditions of domestic animals and beasts of burden, had unfortunately entered upon a wild crusade against science. In doing so it had endeavored to excite the prejudice of many worthy people and to exploit the sentimentalism of a great many people who were still very worthy, though perhaps not very wise. Sir David Bruce, in seconding the motion, said that it seemed a pity that it should be necessary to meet year after year to affirm propositions which one would think were self evident—to repeat, for example, that animal experimentation was absolutely necessary for advance in our knowledge of the prevention of disease, or that experimenters did not torture or inflict unnecessary pain on animals. No less than ninety-seven per cent. of all experiments on animals in this country were inoculations involving no sort or kind of operation on any animal. No operation more than the lancing of a vein under the skin was allowed to be done on any animal except under an anæsthetic. There were people at the present time so constituted as to the nerve cells of their brains that they believed the earth was flat, and many others equally erroneous notions were held just as firmly. It must be remembered that these same people might be very exceptionally endowed in other ways, and the only way to explain these phenomena was by saying they were monomaniacs—a particular part of their brain was abnormal or imperfectly developed. Else how

could it be that there were people who said that consumption was not caused by the *Bacillus tuberculosis,* that Malta fever was not caused by the *Micrococcus melitensis,* that sleeping sickness was not caused by a trypanosome? Would any one of their opponents who were so loud in print drink a little of the milk of a goat infected with Malta fever, or introduce under his skin a single sleeping sickness trypanosome, or allow an infected tsetse fly to bite him? Lord Cromer said that Mr. Stephen Coleridge had drawn up a bill to restrict vivisection, but he would mention one of its suggested provisions to show its absurdity. It was provided by one of the clauses that no one was to be allowed to conduct any experiment unless he could obtain a certificate signed by at least one justice of the peace and a clergyman stating that he had a reputation for humanity. He thought such a proposal was almost unique in our legislative annals. What standard of humanity was to be adopted? A justice of the peace who was a member of the Antivivisection Society would adopt one standard and the justice of the peace who was a master of hounds, for instance, would adopt a different one. The proposal was really absurd and of itself was almost sufficient to laugh the bill out of court. Could it be reasonably suggested that an eminent man like Professor Starling was to be compelled to go and look about for a justice of the peace and a clergyman who would give him a certificate for humanity? If that was to become law, he would suggest a very useful amendment. It was that no one even in this free country should be allowed to speak against vivisection unless he could produce a certificate signed by at least two judges and a brace of bishops that he had a reputation for common sense and accuracy of statement. In conclusion, Lord Cromer said that he hoped the report of the Commission on Vivisection would be issued in July and that there would be no further delay.

There have recently appeared in some of the lay press articles on bogus nursing homes and massage institutes. While it is recognized that most of these articles emanate from sensation mongers, there is no doubt that there exist so called nursing homes which are in reality brothels, and it is desirable that steps should be taken to deal with this evil. It may be doubted, however, whether detailed consideration of the scandal in the general press is desirable, as it would seem that under existing conditions only the police can take effective action. Another way of dealing with the evil would be to provide measures for the inspection of nursing homes. Among the recommendations of the select committee of the House of Commons appointed some years ago to consider the question of nurses' registration was one providing for the inspection of nursing homes. Such inspections would be of some protection against bogus institutions. The recent bills that have been introduced dealing with the registration of nurses do not provide for a system of inspection, and it would seem desirable to insert a clause to that effect. At the present time there are legitimate societies and associations of trained masseuses, and it would be desirable that all genuine masseuses should be members of one of these associations, so that there would be less risk of confounding the real with the bogus institution.

Therapeutical Notes.

An Iodine Preparation for Mouth Disinfection.—Talbot (*Journal of the American Medical Association,* April 2, 1910), has found the following mixture, which he calls iodoglycerole, to be superior to the ordinary tincture of iodine for application to the mucous membrane, gums and teeth in the treatment of interstitial gingivitis:

℞ Zinc iodide, ...15 parts;
Water, ...10 parts;
Iodine, ...25 parts;
Glycerin, ...50 parts.
M.

The proportions were suggested by Prof. C. S. N. Hallberg, of the University of Illinois School of Pharmacy, in order to obtain a clear preparation without deposit. As compared with the ordinary tincture of iodine, its astringent properties are greatly increased, the glycerin causes rapid absorption, and the irritating effects are reduced to a minimum. The penetrating effect is said to be remarkable. The glycerin thickens and prevents the preparation from mixing with the saliva and running over the mouth as the tincture does. Long, round, wood applicators can be obtained at the drug and instrument houses, and on one end cotton is wound; this is saturated with the preparation and the gum margins above and below painted. The jaws are closed, the lips and cheeks distended, and the application made as before, the teeth also being covered; the lips and cheeks are held away from the jaws until the iodine has dried.

REMEDIES OF RECENT INTRODUCTION.

(*Continued from page 1342 of volume xci.*)

Asurol is a double salt of mercuric salicylate and sodium amidooxyisobutyrate containing 40.3 per cent. of mercury. It is freely soluble in water and is intended to replace mercuric salicylate in the treatment of syphilis. A 5 per cent. solution is prepared, of which the dose is 1 c.c. to 3 c.c.

Bierbrich Scarlet Red (Medicinal) is amidoazotoluolazobetanaphthol. It forms a dark, reddish brown powder, insoluble in water, slightly soluble in alcohol, acetone, and benzol, and 1 in 14 in chloroform. Used as an oily solution or as an ointment to promote the healing of wounds in 5 and 10 per cent. dilutions. It is readily soluble in oils and in warmed paraffin.

Brovalol is bromoisovaleric acid borneolester. It is used as a sedative and nervine tonic, in doses of 1 to 3 perles, several times a day.

Carbenzym is the name given to an "adsorption" compound of vegetable charcoal and trypsin, which is put up in tablet form. It is recommended for use in gastrointestinal affections. The powder, suspended in sterile soda solution, is injected into fistulous tracts, etc.

Catalysine is the name given to a compound of lecithin bases obtained by a special process and combined with hæmoglobin iron. Used against infectious diseases.

Cethal is a mixture of cinnamyl methyl with 10 per cent. of thymol, which is recommended as an inhalant in lung disease.

(*To be continued.*)

NEW YORK MEDICAL JOURNAL
INCORPORATING THE
Philadelphia Medical Journal
and The Medical News.
A Weekly Review of Medicine.

Edited by
FRANK P. FOSTER, M. D.

Address all business communications to
A. R. ELLIOTT PUBLISHING COMPANY,
Publishers.
66 West Broadway, New York.
Cable Address: Mediour, New York.

Subscription Price:
Under Domestic Postage Rates, $5; under Foreign Postage Rate, $7; single copies, fifteen cents.
Remittances should be made by New York Exchange or post office or express money order, payable to the A. R. Elliott Publishing Co., or by registered mail, as the publishers are not responsible for money sent by unregistered mail.
Entered at the Post Office at New York and admitted for transportation through the mail as second class matter.

NEW YORK, SATURDAY, JULY 2, 1910.

ANTIVIVISECTION AND THE AGRICULTURAL FAIRS.

Apparently the Antivivisectionists do not in the least discriminate between the allowable and the altogether reprehensible in their propaganda. It was allowable, though quite discreditable, for them to rent space in a frequented thoroughfare for a public parade of their exhibition of the alleged horrors of animal experimentation—discreditable because the exhibition was mendacious. This was what they did last winter. They then sought to exploit the same exhibition at the Actors' Fair, so that, had they been allowed to carry out their scheme, they would have been taking advantage of public gatherings in the interest of beneficence to vilify a particular class of their fellow citizens—obviously a performance which could not decently be allowed, as the managers of the Actors' Fair were finally convinced. It is true that their exhibition, like their printed harangues, rests largely on lies, but lies have a potency and a vitality that the ordinary run of men are powerless to resist, as is well shown in the following verses reprinted in last Sunday's *Sun* from the *London Evening Standard*:—

There is no weapon that can balk its thrust,
No steel of proof can cast it harmless by;
No stainless honor or unsullied trust
Can foil the fiendish malice of a lie.

The poison sinks insidious from its sting;
The taint corrodes, the black absorbs the light;
And contradiction spreads a useless wing
To check the hateful triumph of its flight.

We speak of Time's correction, and of Truth
Whose great tribunal waits to test and try;
We look for swift oblivion—yet in sooth
There are few things more deathless than a lie.

It seems that the Antivivisectionists are now meditating the exploitation of the county agricultural fairs that are held in the autumn in the State of New York, where vast throngs of honest but more or less unthinking citizens resort in a state of mind to be impressed by anything that appears to have the sanction of the authorities, and especially by such a gruesome exhibition as the Antivivisectionists intend to spring on visitors to the fairs. It was quite proper therefore that the leading officers of the Medical Society of the State of New York, of its Committee on Legislation, and of its Committee on Experimental Medicine should issue a circular, as they did on June 20th, calling on the medical organizations of the State to exercise their influence to induce the officers of the agricultural fairs to "refuse to allow this unsightly, demoralizing, and misleading exhibition to be held in connection with their displays." The medical profession of the State of New York is practically unanimous in demanding that the present humane conduct of animal experimentation in the State shall not be interfered with; therefore any organized attempt to bring the practice into disrepute is an act of hostility to the profession. Whatever their legal rights may be, we feel sure that the officers of agricultural fairs have no moral right to countenance the vilification of medical men which it is the purpose of the Antivivisectionists to carry out.

PROGRESS IN PHARMACOLOGY.

The fecundity of the German chemical manufacturers in new remedies formed by chemical synthesis is an ever increasing source of astonishment. In a report presented to the New York State Pharmaceutical Association last month by the chairman of the association's Committee on New Remedies the articles enumerated as having been introduced during the past year amounted to 171. Not all of these were of foreign origin, a small number being credited to American firms, but the stream of new remedies flows fullest and swiftest from Germany, the preparations reported being of varied composition and identity. The period reviewed embraces the year from June, 1909, to June, 1910, and the changing tendency of aim in the production of remedies is remarkable and worthy of note.

There has been an increased production of serums, both curative and diagnostic, chief among these being a diagnostic test for carcinoma of the

stomach made possible by a peptide compound of an amino acid and a syphilis diagnostic test which is a serum preparation from the goat and the Guinea pig. The influence of the biological investigator in the production of new serums and glandular secretions has made itself felt in the world of medicine during the year. It is not long ago that the active principle of the suprarenal gland was isolated, and its field of employment in medicine has been boundless, but the old ever gives way to the new and evidences are multiplying that the pituitary gland, so long an enigma to the anatomist, an organ whose function is even now but dimly understood, is destined to play a great rôle in the treatment of certain diseases, particularly of the circulatory system. Several preparations of the gland have been introduced into medicine within a very recent period. Possessing astonishing hyperæmic properties, pituitrin, the active principle of the infundibular portion of the gland, is similar in its action to adrenalin, but it has the advantage over adrenalin of prolonging the rise in blood pressure and the slowing of the heart's action. The hormones, of which adrenalin and pituitrin are types, continue to attract the interested study of the physiological chemist, and after the production of secretine, the hormone for the pancreatic secretion, a hormone from the gastric mucous membrane has been isolated which appears to have a marked peristaltic action, its discovery at the same time opening up an interesting field of discussion regarding the theory of constipation.

A new application of the tuberculin treatment of tuberculous disease is represented by a preparation named tubarsyl, consisting of ampoules of sodium amidophenylarsenate and tuberculin, old, which are administered in alternative doses. A similar substance is tuberal, described as a solution of the therapeutic agent of tubercle bacilli preserved with carbolic acid, which is given in tablespoonful doses. Ergot has been made to give up new active principles, represented by tyramine and ergothionine, the last named base being peculiar in that it contains an atom of sulphur in its molecule.

Formaldehyde is a fruitful source of novelties for the chemist, and numerous new compounds and applications of the gas have been noted during the year. As a disinfectant formaldehyde in some of its forms is probably the most efficient agent at our disposal. As is well known, when formaldehyde is evaporated from alcohol polymerization takes place and we obtain the solid form of formaldehyde known as paraformaldehyde. When heated this compound decomposes with the liberation of formaldehyde gas, and this fact enables us to make use of it as an active disinfectant. An ingenious device for securing the fullest power of a disinfectant consists of a tin canister of any convenient size, having a space at the top of about an inch or two inches in depth to accommodate paraformaldehyde, while a sulphur candle is fitted to the bottom of the canister. Air holes are provided. When the sulphur candle is lighted, sulphur dioxide and heat are produced. The heat striking on the bottom of the paraformaldehyde container decomposes the chemical and in this way the combined fumes of sulphur dioxide and formaldehyde are liberated in the atmosphere. It can readily be understood what a powerful disinfecting agent is obtained by this means, especially in a moist atmosphere.

The difference between antisepsis and disinfection is not so well understood by the practising physician as it ought to be. Chinosol is a remarkable example of a chemical substance having an antiseptic value equal to mercuric chloride and considerably higher than carbolic acid while its germicidal value is comparatively low. Thus it will be seen that we may have a powerful antiseptic having little disinfectant or germicidal value, but enormous value as an antiseptic with no corrosive or caustic action.

In the preceding number of the *Journal* was published the first of a series of notes on remedies of recent introduction, the purpose of which is to keep our readers *au courant* with the progress of preventive medicine and discoveries in pharmacology, and we trust that it will prove useful in practice and for reference.

PRIMARY CARCINOMA OF THE JEJUNUM AND ILEUM.

The diagnostic difficulties and treatment of primary carcinoma of the jejunum and ileum, together with its infrequency, have been studied recently by Kummer (*Revue médicale de la Suisse romande*, February 20th), who has been able to collect fifty-seven instances, to which he has added one of his own. The clinical evolution differs greatly. Most frequently, the onset is accompanied by a change in the general health, such as a feeling of malaise and muscular weakness, occurring before any symptom of an intestinal disorder is manifest. After a variable length of time local symptoms make their appearance, one of the earliest being a localized abdominal pain which may be present under the costal border, in the epigastrium, or in the hypogastrium. Diarrhœa is one of the earliest symptoms, being intermittent in character, with or without melæna. It is in no way characteristic and not infrequently is wanting. At a more advanced stage persistent and uncontrollable diarrhœa may be an indication of a perforation having taken place between the small intestine and the colon.

Intestinal stricture is the most prominent symptom of a malignant neoplasm of the small intestine; it manifests itself at a time when the process has become somewhat advanced, but presents no characteristic picture. It gives rise to colics which indicate the presence of some obstruction to the onward flow of the fæces. The pain is spasmodic and is easily distinguished from the fixed pain occurring at the beginning of the disease. When the stricture becomes narrower, a localized meteorism takes place in the afferent loop, and then a swelling, giving a tympanitic percussion note, may be seen on inspection, over which periodical peristaltic waves are noted, giving rise to the phenomenon termed intestinal tetany. The classical phenomena appear as soon as occlusion has become complete. This may take place suddenly after symptoms of an ordinary indigestion or the administration of a purgative. Palpation is frequently negative, either because the tumor is very small or because meteorism prevents its detection.

The clinical picture undergoes many modifications according to the nature of the complications present, such as perforation into one of the neighboring viscera or into the peritoneal cavity, a peritoneal or lymphatic generalization of the process, or distant metastases. Carcinoma arising in the initial portion of the ileum presents a different clinical picture from that arising in the lower end of the small intestine. The symptoms are entirely digestive in nature, such as dilatation of the stomach, copious vomiting, melæna, and achlorhydria. These cannot be mistaken for symptoms of a pyloric cancer, on account of the presence of bile in the vomit and clay colored stools.

The early diagnosis of carcinoma of the small intestine is almost an impossibility, on account of the absence of all symptoms of localization. Later on, when obstruction occurs, the presence of the growth is hidden behind the symptoms of the occlusion. The distinction between carcinoma and sarcoma is easier to make, because the latter form of growth never gives rise to symptoms of stenosis; it is frequently accompanied by a rise of temperature, a condition which never takes place in carcinoma. If the latter type of growth presents no complications, it generally assumes the form of an annular tumor much smaller than sarcomatous neoplasms which have arrived at the same degree of development. If a carcinoma of the jejunum can be palpated, it is ordinarily found at the left of the umbilicus, and when in the ileum it is situated to the right. In cases of stenosis from carcinoma the diagnosis of the seat of the obstruction is made according to the rule applicable to any form of intestinal stricture, such as the presence of icterus from retention, etc. Other symptoms are of less importance, but may be of value in confirming a diagnosis when once made. The fixed pain, colic, melæna, hæmatemesis, indican in the urine, and a decrease of hæmoglobin are all of value in this respect. Loss of appetite and flesh and cachexia are often very marked from the very onset of the disease, a fact which it is well to remember.

Like any cancer which is not operated on, that of the small intestine results in death, some types following a rather slow progress, perhaps lasting for several years before giving rise to occlusion. But when this takes place death rapidly occurs. Hæmorrhage and peritonitis from perforation of the neoplasm may also produce death. As to the so called benign carcinoma, its duration is completely unknown. The benignant nature of these growths is not necessarily permanent, and, even when benign, an intestinal growth is always to be feared on account of the always possible occurrence of stenosis. Surgical intervention resorted to in time is naturally the only measure for preventing serious occurrences. Resection of the diseased intestine must be accomplished whenever possible, and where the disease is too far advanced a palliative operation must be done. This is represented by any form of intestinal exclusion, the procedure adopted naturally varying according to the pathological conditions present.

THE PROPOSED PARADE IN NEW YORK.

Doubtless it was in order to make amends to the juvenile element of New York for the suppression of Fourth of July din this year that a parade of the National Guard was provided for. As we understand it, the spectacle has not yet been definitively determined upon, and the scheme is meeting with rather active opposition. It is said that to call upon the city regiments to march through the streets unnecessarily in the heat of summer is to inflict a hardship upon them, besides depriving the men of a well earned holiday. These complaints do not come from the guard itself as a body, and probably they are but slightly if at all inspired by its members individually, for our militia has always shown itself ready to undertake any duty imposed upon it.

It seems to us that the protests are well founded. The men who compose the regiments have their regular vocations. In one way or another they are working men, and their days of liberty are none too frequent. To deprive them of one such day in order to make a show of them, and for no other reason, does appear hard on them. We have plenty of military processions in New York, and it is our opinion that persons who delight in such spectacles can well

afford to forego the show that had been arranged for next Monday. There will probably be patriotic orations galore, and there will be fireworks in the evening. Those ought to suffice, we should say.

We are not fortunate in the dates of our chief occasions of street pageantry. The 4th of March, when once in four years a President of the United States is inaugurated in Washington, is often so inclement as to put a damper on the popular enthusiasm, to say nothing of worse effects; and Independence Day is almost sure to be hot and sultry. There is still some hope, we suppose, that the date of the presidential inauguration will be changed before long, but any change in the date of the other celebration would doubtless be generally looked upon as robbing it of its commemorative character. The Hudson-Fulton celebration, protracted as it was, was made bearable by the fact of its occurring in October, but a parade in a snowstorm or under a torrid sun is anything but pleasant.

THE PROSPECT FOR THE FOURTH.

Just now it is difficult for the average New Yorker to put implicit trust in the negative evidence of his ears, for at the time of this writing, on Wednesday, there is an entire absence of the immemorial din preliminary to the small boy's celebration of the Fourth of July. The difficulty arises from the fact that for so many years we have been assured by the newspapers that measures had been taken by the city authorities to prevent the horrid noises which in the juvenile mind are indispensable to the due observance of Independence Day; and yet the assurance has always heretofore proved baseless. The cacophony generally begins several weeks in advance of the Fourth; yet here we are within a few days of the anniversary and there is thus far no noisy heralding of its approach. The prospect seems good, then, for a "sane and safe" observance of the day. Nevertheless, the prudent practitioner of medicine will not allow himself to be caught without a fair supply of tetanus antitoxine.

News Items.

Changes of Address.—Dr. Bodog F. Beck, to 285 Central Park West, New York.

Dr. Herman Friedel, to 932 Van Duzer Street, Stapleton, Staten Island, N. Y.

New Buildings for the Singapore Medical School.—Announcement is made that Mr Tan Chay Yan, a resident of Singapore, has donated $15,000 for the erection of new buildings for the Straits and Federated Malay States Medical School.

Pellagra in Philadelphia.—According to reports published in the daily press, twelve well developed cases of pellagra have been discovered among the inmates of the Philadelphia Hospital for the Insane, and there are sixteen others under observation.

An Honorary Degree for Dr. Simon Flexner.—At the two hundred and ninth annual commencement of Yale University, held on June 22d, the degree of doctor of science was conferred upon Dr. Simon Flexner, medical director of the Rockefeller Institute for Medical Research.

New Physicians in North Carolina.—Seventy-nine out of a class of ninety-five, who recently took the examination of the State Board of Medical Examiners of North Carolina, were granted licenses to practise medicine in the State. In addition to these, sixteen were granted licenses upon certificates from other States.

Italian Doctors of New Jersey to Organize.—A meeting of prominent Italian physicians from several counties in New Jersey was held in Hoboken recently for the purpose of discussing the organization of the Italian Medical Society of New Jersey. Dr. T. R. Paganelli, of Hoboken, was elected chairman, Dr. Cammorata, of Jersey City, secretary, and Dr. Pezzi, treasurer.

A Free Dispensary for Tuberculosis Patients at the Gross Medical School, Denver, will be opened in the near future. Daily clinics will be held, with a clinic once a week for children, and a night clinic for people who work during the day. Milk and eggs will be given to people who cannot afford to buy them. Money is also being collected for the establishment of day camps.

The Mohansic State Hospital for the Insane.—Among the bills signed by Governor Hughes recently was one authorizing the State Lunacy Commission to contract for the erection and completion of the Mohansic State Hospital for the Insane, to accommodate two thousand patients, at a cost of $2,000,000, and make a preliminary survey appropriation of $100,000 to start the work.

Kansas State Board of Medical Registration and Examination.—At the annual meeting of the board, held in Kansas City on June 16th. Dr. A. S. Rose, of Sabetha, was elected president, to succeed Dr. H. A. Dykes, who was elected secretary, to succeed Dr. F. P. Hatfield, who is retiring from the board. The board consists of seven members, who hold office for four years.

A New Wing for the Methodist Espicopal Hospital of Philadelphia.—With funds donated for the purpose by Mr. Thomas Bradley, of Philadelphia, the work of erecting an addition to the Methodist Espicopal Hospital, Philadelphia, was started on June 23d. The new structure, which will cost $41,000, will be of brick, and will be four stories high. It will be known as Bradley Hall, and is to be used mainly as a dormitory for the employees of the hospital.

The Annual Banquet of the Alumni and Faculty of the Medical Department of the University of California was held in Los Angeles on the evening of June 16th. Dr. Charles W. Bryson, dean of the college, was toastmaster, and among those who responded to toasts were Dr. James Harvey Seymour, Dr. Lyman B. Stookey, Dr. William E. Carter, Dr. E. L. Leonard, and Dr. S. Gwaltney. The banquet was given in honor of the graduates from the medical department.

Books for Hospital Patients.—As a memorial to Hon. Patrick A. Collins the sum of $2,321 has been set aside for the purpose of supplying the patients at the Boston City Hospital with reading matter. It will be known as the Collins Memorial Library. This money was left from the Collins Memorial Fund, and the committee having the fund in hand was desirous that it be used for this purpose, stipulating, however, that $1,800 be spent for books and bookcases, and $500 be deposited with the city treasurer and invested, the interest to be spent annually for the purchase of new books for the patients.

Bills Regarding Brooklyn Hospitals Vetoed by Governor Hughes.—The bill providing for the reconstruction of the buildings of the Long Island State Hospital, in Flatbush, has been vetoed by Governor Hughes, on the ground that the State title should be placed on a firm basis before expenditures were made. The repairs that are urgently needed at the institution are to be provided for out of the contingent fund of $250,000 which has been appropriated for the Commission in Lunacy. Governor Hughes also vetoed the appropriation bills for the expenditure of $38,000 for Kings Park State Hospital and for the expenditure of $9,000 for the Central Islip State Hospital.

New Officers for the Blackwell Medical Society were elected as follows at the annual meeting of the organization, held in Webster, N. Y., on June 16: President, Dr. Jennie M. Turner, of Newark; vice-president, Dr. Cornelia White Thomas, of Rochester; secretary, Dr. Mary Dickinson, of Rochester; treasurer, Dr. Mary A. Nickerson, of Rochester; councillors, Dr. Mary J. Slaight, of Rochester; Dr. Nettie H. Woodruff, of Rochester; and Dr. Marion C. Potter, of Rochester.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Department of Health for the following statement of new cases and deaths reported for the two weeks ending June 25, 1910:

	June 18th—		June 25th—	
	Cases.	Deaths.	Cases.	Deaths.
Tuberculosis pulmonalis	585	154	518	137
Diphtheria and croup	405	38	323	37
Measles	791	20	843	20
Scarlet fever	513	24	360	20
Smallpox	..	1	..	..
Varicella	132	..	232	..
Typhoid fever	46	8	26	7
Whooping cough	64	7	60	3
Cerebrospinal meningitis	3	8	4	5
Total	2,559	260	2,366	229

Improvements at the Walter Reed General Hospital, Washington.—The grading of the parade ground for the drilling of a company of the Hospital Corps is now proceeding at the Walter Reed General Hospital, Washington. The ground is about one hundred and fifty yards square, and lies between the main hospital building and Georgia Avenue. The building for the female nurses will be begun before long. Bids for the work have been invited. The structure will be of brick, like the main building and the officers' quarters. It will have a frontage of eighty feet and a depth of thirty-two, and will be situated just west of the drive from the street to the hospital, between the officers' quarters and the main hospital structure. It will be two and a half stories high. Captain William A. Wickline, Medical Corps, is in command of Company C, now stationed at the hospital.

Vital Statistics of Minneapolis.—During the month of April, 1910, the deaths from all causes reported to the Department of Health of Minneapolis numbered 325, corresponding to an annual death rate of 10.50 in a thousand of population. There were 65 deaths of children under five years of age; 39 under one year of age, and 26 between one and five years of age. Seventeen stillbirths, 9 males and 8 females, were reported. The births recorded numbered 483 and the marriages 270. During the month of May, the deaths from all causes numbered 301, which corresponds to an annual death rate of 9.55 in a thousand of population. Of the total number of deaths 71 were of children under five years of age, 43 under one year of age, and 28 between one and five years of age. The stillbirths numbered 21, 19 males and 2 females; 298 marriages and 468 births were reported during the month. The average death rate for the year 1909 was 8.63 in a thousand of population.

American Surgeons to be Guests of Dr. Osler.—Twenty-seven surgeons, all members of the Society of Clinical Surgery, sailed for England on Wednesday, June 22d, to attend the meeting of the Royal Society of Medicine, and the London Surgical Society, which will be held in London during the first week in July. During their stay in London, the entire party will be entertained by Dr. Osler. The delegation from Philadelphia, which outnumbers that from any other city, is composed of the following well known surgeons: Dr. Charles H. Frazier. Dr. Gwilym G. Davis, Dr. John H. Gibbon, Dr. James P. Hutchinson, Dr. Richard H. Harte, and Dr. Robert Grier Le Conte. They will be accompanied by Dr. John Miller Turpin Finney, of Baltimore; Dr. Joseph A. Blake and Dr. George Emerson Brewer, of New York; Dr. John Cummings Munro, Dr. Ernest Amory Codman, and Dr. Fred Bates Lund, of Boston; Dr. Emmet Rixford, of San Francisco; Dr. George Washington Crile, of Cleveland; Dr. Charles Horace Mayo, of Rochester, Minn.; Dr. Lewis Linn McArthur, Dr. Malcolm La Selle Harris, Dr. Arthur Dean Bevan, and Dr. John Benjamin Murphy, of Chicago.

The Birth Rate of France.—A series of measures designed to stimulate the birth rate in France has been introduced in Parliament. They include the imposition of additional military service upon bachelors over twenty-nine years of age; making obligatory the marriage of State employees who have reached the age of twenty-five years, with supplementary salaries and pension allowances for those with more than three children; and the repeal of the law requiring the equal distribution of estates among the children. The dislike of Frenchmen to divide their property is a frequent cause of restricted families, according to those who have made a study of the subject. The proposed legislation follows the recent publication of vital statistics, which showed that the births in the republic during 1909 were 770,000, against 792,000 in the preceding year and that the population has been increased by only 3,000,000 since 1851.

Vital Statistics of New York.—During the week ending June 18, 1910, there were reported to the Department of Health of the City of New York 1,394 deaths from all causes, corresponding to an annual death rate of 15.43 in a thousand of population, as compared with a death rate of 14.10 for the corresponding week in 1909. The annual death rate for each of the five boroughs, during the week, was as follows: Manhattan, 14.89; the Bronx, 18.19; Brooklyn, 16.05; Queens, 13.75; Richmond, 12.50. There were 133 stillbirths. The deaths of children under five years of age numbered 462; 289 under one year of age, 96 between one and two years of age, and 77 between two and five years of age. There were 112 deaths from diarrhœal diseases, under five years of age, and 119 over five years of age. There were 22 deaths from suicide, 3 from homicide, and 62 deaths due to accidents, and 83 due to congenital debility and malformations. Two thousand four hundred and seventy births and 1,093 marriages were reported during the week.

The Health of Chicago.—During the week ending June 18, 1910, the following cases of and deaths from transmissible diseases were reported to the Department of Health of Chicago: Typhoid fever, 19 cases, 1 death; measles, 381 cases, 5 deaths; German measles, 61 cases, 0 deaths; scarlet fever, 167 cases, 10 deaths; whooping cough, 60 cases, 4 deaths; diphtheria, 130 cases, 16 deaths; smallpox, 1 case, 0 deaths; chickenpox, 30 cases, 0 deaths; tuberculosis, 135 cases, 70 deaths; cerebrospinal fever, 0 cases, 2 deaths; pneumonia, 42 cases, 124 deaths. Fifty cases of contagious diseases of minor importance were reported, making a total of 1,076 cases during the week. There were 43 deaths from diarrhœal diseases, under two years of age, and 31 due to congenital defects and accidents. The total deaths for the week, exclusive of stillbirths, numbered 626, corresponding to an annual death rate of 14.3 in a thousand of population, as compared with a death rate of 13.7 for the previous week and 12.4 for the corresponding period in 1909. There were 191 deaths of children under five years of age; 122 under one year of age and 69 between one and five years of age.

The Philadelphia Polyclinic to Remain Independent.—Announcement has just been made by the trustees of the Philadelphia Polyclinic, that the institution will not affiliate with any other medical school, but will continue its work independently, as heretofore. Committees were appointed some time ago to consider the proposition of union with the University of Pennsylvania and certain other schools, and at a meeting held recently their reports were read and the above decision was reached. The main objection to consolidation is the fact that the Polyclinic is essentially a graduate school. Its students and faculty are drawn from various institutions whose ideas of medical theory are often divergent, and it is contended that the institution would be less representative if connected with any one school. It is expected that the new buildings of the Polyclinic now under construction will be completed shortly. The resignations of Dr. Francis T. Stewart, as professor of surgery, and Dr. James Thorington, as professor of ophthalmology, have been accepted by the trustees. A new chair of röntgenology was created and Dr. Charles L. Leonard elected to fill it. Dr. John H. Jopson was elected professor of surgery; Dr. Wendell Reber, as professor of ophthalmology, and Dr. William Zentmayer as extramural lecturer on ophthalmology.

Cornell University Commencement.—At the twelfth annual commencement of the Cornell University Medical College, held on June 15th, the degree of M. D. was conferred upon sixty-eight graduates, among them being seven women. The candidates for degrees were presented by Dr. William M. Polk, dean of the faculty, and the degrees were conferred by President Jacob Gould Schurman, who afterwards addressed the class on Progress in Medical Education. The honor roll of the class of 1910 was read by Dr. Polk, a list limited to ten names, included in which were four of the seven young women. The John Metcalf Polk memorial prizes were awarded as follows: First prize, $300, to Berton Lattin; second prize, $125, to Josephine Bicknell Neal, and third prize, $75, to Earl Vincent Sweet.

Gifts and Bequests to Charity.—By the will of Mrs. Henrietta Friend, who died some time ago in Frankfort, Germany, the Columbia Hospital, Milwaukee, will receive $40,000; Milwaukee's Infant Home and Hospital will receive $5,000, and the Cleveland, Ohio, Orphan Asylum, $1,000.

By the will of Emilia M. Zitger, the Roosevelt Hospital, New York, will receive $2,000.

By the will of Frederick W. Singer, of Milwaukee, the Children's Free Hospital and the Milwaukee Infants' Home and Hospital will each receive $2,500.

The will of S. E. King, of Ottawa, Minn., contains a bequest of $40,000 for the erection of a hospital in Ottawa.

By the will of Caroline M. Mead, who died recently in Coscob, Conn., the Greenwich Hospital will receive $5,000 to endow the William H. Mead memorial bed, the rector of Christ Church to name the persons who shall use the bed. The Greenwich General Hospital will receive $1,000.

The Antituberculosis Society of Missouri has received a donation of $1,000 from the Anheuser-Busch Brewing Association of St. Louis.

The will of Angus MacDonald, who died recently in Boston, contained a bequest of $1,000 for the Boston University Medical School, the income of which is to be used for a scholarship.

By the will of Jane Gunner, who died recently in Philadelphia, the Pennsylvania State Hospital for the Insane becomes a reversionary legatee.

The will of Mary E. Brinckerhoff, who died in New York some time ago, contains a bequest of $25,000 to the New York Infirmary.

The People's Hospital, which is situated at 203 Second Avenue, New York, was opened on Tuesday, June 21st, with suitable ceremonies. The building is four stories high, is fireproof throughout, is well equipped with all modern appliances, and has accommodations for fifty patients. Most of the equipment was donated, prominent among the donors being the Emperor of Austria, who presented an operating table to the institution. The hospital was built and presented to the public service through the efforts of citizens of Austro-Hungarian birth or descent, and the work of collecting the necessary funds was begun several years ago by Dr. Ignatz H. Rottenberg, who was assisted by Mr. Edward Mandel, principal of a public school in New York. The medical board consists of Dr. I. Adler, consulting physician; Dr. C. A. von Ramdohr, consulting obstetrician; Dr. I. M. Rottenberg, Dr. A. Fishman, and Dr. J. Broder, visiting physicians; Dr. A. Bassler, visiting gastroenterologist; Dr. J. Bieber and Dr. M. Landesman, attending physicians; Dr. J. P. Grant, Dr. B. Tilton, Dr. J. J. McGrath, Dr. G. I. Miller, and Dr. C. Pfister, visiting surgeons; Dr. S. Strauss, Dr. R. Cronson, Dr. J. O. Polak, Dr. S. Rottenberg, Dr. C. Kennedy, and Dr. B. Gordon, visiting gynæcologists; Dr. K. B. Page and Dr. A. Wolbarst, visiting genitourinary surgeons; Dr. S. Spiegel, Dr. M. Lewson, and Dr. S. Forstot, attending surgeons; Dr. M. Davidoff, attending gynæcologist; Dr. H. W. Korman, attending genitourinary surgeon; Dr. S. S. Freidman, Dr. C. Broder, Dr. J. A. Stoloff, Dr. J. A. Prager, and Dr. M. Rosenberg, assistant attending surgeons; Dr. A. L. Weindrug and Dr. L. Polon, assistant attending gynæcologists; Dr. G. Wolf, Dr. M. Wolper, and Dr. J. Barsky, visiting pædiatrists; Dr. Z. Sharfin, attending pædiatrist; Dr. L. Weiss, visiting dermatologist; Dr. J. S. Price, visiting ophthalmologist; Dr. M. Rosenbaum, assistant attending ophthalmologist; Dr. D. S. Dougherty and Dr. I. Grushlaw, visiting laryngootologists; Dr. G. Kremer and Dr. I. E. Pasternak, attending laryngootologists; Dr. J. H. Stebbins, Jr., pathologist and curator.

Pith of Current Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL.

June 16, 1910.

1. Cardiac Syphilis, By GEORGE G. SEARS.
2. Treatment of Inebriety, By IRWIN H. NEFF.
3. Tuberculous Peritonitis. A Plea for the Treatment of Peritoneal Tuberculosis by Hygienic rather than Surgical Measures, By ARTHUR K. STONE.

1. **Cardiac Syphilis.**—Sears says that an active discussion has been going on for several years as to whether there is a form of arterial disease which is peculiar to syphilis. It has been stated by Heller, of Kiel, and his pupils that so called mesaortitis productiva is due to syphilis alone. This is probably too broad a generalization, since toxic and infectious agents appear at times to produce a similar inflammation, but it is generally admitted that lues is the commonest cause. Mönckeberg's statistics, based on published cases, showed that thirty-three per cent. possessed undoubted evidences of syphilis, and forty-four per cent. showed so called metasyphilitic affections. Fraenkel and Much tried the Wassermann reaction in six cases of mesaortitis productiva and found all positive. Chiari found that the lesion was present in sixteen of twenty-seven specific cases, and in twenty-one of forty-four general paralytics. It is interesting to note in this connection that Wright and Richardson say that the spirochætæ which they discovered in five cases of specific aortitis were found practically only in or about degenerative or necrotic areas of the tissue in the media and intima, while the vasa vasorum showed proliferative endarteritis. The number of opinions regarding the point of origin of syphilitic vascular disease seems to be limited only by the number of coats possessed by the vessels. Heubner and his followers assert that it starts in the intima. Koester and Rumpf consider the media the seat of the initial process, while Marchand, Baumgarten, and many others look on the adventitia and the lymph space between it and the media as primarily involved, the periarteritis alone being specific. Perhaps it is the fancy of one who has studied syphilis only from the clinical side, but it may be that syphilis in its pathological manifestations is essentially a disease of the small vessels, among which the vasa vasorum are to be included. They react to the presence of the spirochætæ and from the cellular proliferation induced become more or less impervious, the whole process being one of necrosis and subsequent repair. The larger vessels are not primarily attacked, but suffer through their vasa vasorum. Syphilis is now universally credited with being the usual, if not the sole, cause of aneurysm. Proof of this rests chiefly on the specific nature of the mesaortitis productiva from which aneurysm results, but corroborative evidence is furnished by the large percentage which have a specific history or show other syphilitic lesions, by the comparative youth of such patients and by the frequency with which the Wassermann reaction is obtained. As there is no pathological lesion apart from gumma which permits positive diagnosis of syphilitic infection of the heart, so there are no clinical signs or symptoms which are pathognomonic of it or essentially different from those which result from other causes. Yet in spite

of a lack of distinctive phenomena, a probable clinical diagnosis can often be made, and, at times, even a positive one. Traces of former syphilitic affections or coincident syphilis of other organs are of assistance, but their presence may mislead, since the cardiac lesion may, nevertheless, be due to some other cause, nor does their absence negative syphilis, since the heart may be the only organ involved. The prognosis depends on the stage of the disease and the extent of the process. If the muscular has been replaced by fibrous tissue, we are dealing with a mechanical difficulty which cannot be removed, though some measure of improvement may be possible. The amount of permanent damage will depend on the extent to which muscular tissue has been replaced, and on the location of the fibrous patches. If a positive Wassermann reaction signifies a still active process, its presence would give encouragement if one could be convinced that the seat of the process was not elsewhere than in the heart. Early diagnosis is important, since antisyphilitic treatment can only be of value when the lesions are still mainly in the cellular stage, before the formation of connective tissue, but as the anatomical stage of the process cannot be recognized clinically, every patient with cardiac or coronary disease in whom there is reason to suspect syphilis or in whom no other cause can be found should, like those with central nervous disease of doubtful origin, be granted the privilege of having syphilis carefully considered as a possible factor, and if no contraindications are present, be given the chance which mercury and potassium iodide may offer. The proportion of cases of heartblock which are due to syphilis is so large that here also the patient, in the absence of other definite cause, should be given the benefit of the doubt. Cases of pure aortic regurgitation also belong to this class, though without expectation of materially affecting the condition of the valves. If the nature of the process is recognized in the early stages, a definite cure may follow in certain instances, but surprising results have also been recorded in apparently desperate cases. Large doses of potassium iodide are not always necessary, but massive doses have sometimes succeeded where smaller ones have failed. Reliance should not be placed on the iodides alone. Mercury should be combined with it, preferably by injection. Cardiac insufficiency, if present, should be combated by rest and the medication appropriate to the individual case.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

June 25, 1910.

1. Surgical Considerations in Treatment of Chronic Suppurative Nephritis, By D. S. Fairchild.
2. Proper Treatment of Intraperitoneal Abscess in the Lower Abdomen with Special Reference to Rectal Drainage in Pelvic Abscess, By Archibald MacLaren.
3. How Shall the Stomatologist Be Educated? By Eugene S. Talbot.
4. How Shall the Stomatologist Be Educated? By James E. Power.
5. How Shall the Stomatologist Be Educated? By M. H. Cryer.
6. Intermittent Closing of Retinal Arteries, By Arnold Knapp.
7. Acute Gonorrhœal Salpingitis, By Henry B. Orton
8. A Case of Primary Mastoid Periostitis, By William Pearce Coues.
9. Antityphoid Vaccination, By Frederick M. Hartsock.
10. Integument Atrophy: A Sign of Diagnostic Importance in Early Pulmonary Tuberculosis, By Clarence L. Wheaton.
11. Injection of Paraffin into the Appendix in an Attempt to Cure Indirect Inguinal Hernia, By A. C. Stokes.
12. Alum Baths in Typhoid Fever, By Thomas R. Boggs.

6. **Intermittent Closing of Retinal Arteries.**— Knapp remarks that intermittent closing of healthy retinal arteries may occur without any lasting effect on vision. In diseased retinal vessels this phenomenon is of grave significance, as the vessel may remain obstructed or lead to thrombosis. In subjects with retinal arteriosclerosis, especially if obscurations have been present, a rigid general treatment of the arteriosclerosis should be given, mainly with a view of preventing any of the causes which seem to contribute to the closing of arteries.

7. **Acute Gonorrhœal Salpingitis.** — Orton treated a female patient, who became infected just prior to her menstruation, with gonococcic serum, of which 2 c.c. were injected at each treatment; three injections were made in conjunctions with warm iodine douches. After the second injection the temperature dropped; the patient had not the least discomfort after the injections.

9. **Antityphoid Vaccination.** — Hartsock reports 1,100 inoculations in typhoid fever, which method, he says, is now destined to be a practical measure of prophylaxis and of value in the handling of typhoid epidemics. The vaccinations should be generally adopted for the following classes: 1. All persons between the ages of 15 and 25. 2. All persons exposed in time of an epidemic. 3. Nurses and physicians. 4. All persons in the military service, and more particularly in time of war, when troops are enrolled and concentrated in camps.

11. **Injection of Paraffin into the Appendix.**— Stokes reports an interesting case: A farmer consulted an irregular practitioner in Omaha for a hernia. This physician agreed to cure him, without operating, by an injection method. The patient underwent the injection on Saturday and returned to his home, about 120 miles away, the same day. On Monday he became ill with severe pains in his right side, which were diagnosticated by his home physician as due to appendicitis. He was referred to Dr. Stokes for operation, who found the appendix considerably inflamed, very hard, and the hardness extending over the cæcum. The appendix and cæcal base of the appendix were removed, as it was suspected that it was cancerous. On examination of the part removed it seemed to be filled with a hard, waxlike substance. Microscopical examination showed the material to be paraffin. The presence of the paraffin in the appendix had caused the pain. The man made an absolutely uninterrupted recovery, and the pathologist reported the appendix to be free from carcinomatous infiltration.

12. **Alum Baths in Typhoid Fever.**—Boggs has used alum baths in typhoid fever so as to minimize the skin infection. The procedure is carried out as follows: One pound of powdered alum is quickly dissolved in a little hot water and added to the tub during the filling. With the average tub of 450 to 500 litres, this makes approximately a 1 to

1,000 solution. The alum is sent to the ward from the pharmacy in pound packages, so that the time for preparing the bath is not appreciably lengthened. The cost is about 4 cents per bath. The patient is bathed in the alum solution just as in ordinary water and experiences no inconvenience from the presence of the drug. The only noteworthy changes in the skin are a slight increase in desquamation during convalescence and a decided diminution in the incidence of skin complications of all sorts (amounting to 50 per cent.). In these cases the care of the skin is the same in all except for the alum baths. It is not suggested that the alum baths can replace the rigid care of the skin in the ordinary way, but that with them the frequency of skin complications may be still further reduced.

MEDICAL RECORD.

June 25, 1910.

1. The Function of the Corpus Luteum, the Experimental Production of the Maternal Placenta, and the Mechanism of the Sexual Cycle in the Female Organism, By Leo Loeb.
2. On the Affections Clinically Simulating Typhoid Fever, with Especial Reference to and Reports of Cases of Brill's Disease, By H. Fred Lange Ziegel.
3. Studies in Amœbiasis, with a Report of Forty-two Cases, By William Allen.
4. The Care of the Mammary Glands, before, during, and after the Puerperium, By J. H. Tebbetts.
5. Proctitis as a Cause of Hæmorrhoids, with Suggestions for Medical Treatment, By Martin L. Bodkin.
6. A Case of Dextrocardia, By George Richter and Charles H. Weinsberg.

1. Function of the Corpus Luteum.—Loeb has made experiments on guinea pigs. He describes the principal features in the sexual cycle: At a certain period the animal enters the period of heat; a few ovarian follicles rupture and become transformed into corpora lutea. In the early stage of their life the corpora lutea are one of the factors initiating growth processes in the uterine mucosa by means of an internal secretion. If no pregnancy takes place, these proliferative phenomena are slight. If pregnancy does take place, the ovum adds a mechanical stimulus to the sensitizing action of the corpus luteum and a maternal placenta is produced. The ovum can be substituted by an indifferent foreign body. Within a few days this receptive period of the uterine mucosa is followed by a refractory period, in which the uterus no longer reacts to mechanical stimuli, notwithstanding the functioning of the corpus luteum. In this period the corpus luteum exerts a new function, it prevents the rupture of new follicles, and prolongs artificially the period of the sexual cycle. During pregnancy some factor extends the life of the corpus luteum, and the period of the nonrupture of follicles is thus prolonged. At the end of the pregnancy the corpus luteum degenerates, new follicles rupture, and a new cycle begins; the pregnancy as such does not, however, prevent a new rupture of follicles. If no pregnancy is present the factor that prolongs the life of the corpus luteum is absent. The corpus luteum degenerates much earlier and permits new follicles to rupture. The changes in the corpus luteum and in the uterus are accompanied by rhythmic changes in the ovarian follicles.

3. Amœbiasis.—Allen reports forty-two cases of amœbiasis. Of the twelve fatal cases, seven patients died within ten days after first being seen by him; three refused treatment and died in from three weeks to four months; of the two fatal cases in which the patients took treatment, one was complicated by an infected ovarian dermoid cyst and died in three weeks; the other improved sufficiently to later pass through an attack of pellagra, but after nine months died of nephritis. Of the thirty patients still living, he had an opportunity in twenty to give a fair trial to medical measures as we understand them—that is, rest in bed for two weeks at least, on liquid or light diet without residue, with daily colonic irrigations, with or without cathartics or ipecac by mouth. In every case there was prompt relief from distressing symptoms. In two cases diarrhœa returned within two weeks; in eighteen cases the relief continued for from three to fifteen months. Not a single patient gained materially in weight, and he thinks that not a single permanent cure has been effected. Hence, he concludes either that our treatment in amœbiasis has been radically defective, or that medical treatment is only palliative and can hold out no hope of a permanent cure.

BRITISH MEDICAL JOURNAL.

June 11, 1910.

1. A Case of Pernicious Anæmia Having Changes in the Spinal Cord, By W. Hale Whitf.
2. Remarks on a Case of Subacute Combined Degeneration of the Spinal Cord, Simulating Disseminated Sclerosis, with the Rapid Development of Pernicious Anæmia Shortly before Death, By Byrom Bramwell.
3. The Darran Explosion from the Medical Standpoint, By T. Lister Llewellyn.
4. Trigeminal Neuralgia and its Treatment by Alcohol Injection, By Wilfred Harris.
5. On Circular or End to End Suturing of Arteries: Being a Modification of an Already Published Method, By E. Archibald Smith.
6. A Note upon the Mechanical Effects of a Massive Rightsided Pleural Effusion, By A. C. Geddes.

3. The Darran Explosion. — Llewellyn describes the explosion in the Darran Colliery which arose from shot firing at a stone in the mine, the firing igniting coal dust and thus producing the explosion. Of the forty-five men employed in the pit at the time of the explosion, twenty escaped through another pit, four were brought up alive, one dying later, and twenty-one were killed, five rescuers lost their lives. The total casualities were twenty-seven. Llewellyn describes the symptoms of after damp (carbon monoxide) poisoning: The man would be silent, not answering when spoken to; his gait would be unsteady, slow, and rolling from side to side. Then he would fall and become unconscious, with stertorous breathing. Subjective symptoms consisted in tired feeling, weakness in knees and legs, giddiness, palpitation, and difficulty in breathing. All movement becomes difficult, the legs feel heavy, and there is sense of weight on the back. Time sense is delayed. Then would come complete helplessness, followed by unconsciousness. The pulse is small, very irregular, and intermittent. The body is convulsed with severe shivering attacks. Recovery is shown by regularity of breathing with steady

pulse, and, after a variable time, return of consciousness. The treatment Llewellyn divides into preventive and curative: Preventive, no one should advance into the zone of explosion until the ventilation has been, at any rate partly, restored. The air should be taken with the party. It is very important to impress on the men: The very great danger of the after damp; the fact that carbon monoxide gives no indication of its presence either by a cap in the lamp or by smell; also, that the lamp burns well in a poisonous percentage of the gas; never to go in small parties; there should be six or seven in each party. The rescue party should be under a good leader, and should be followed by a reserve party. They should be all fresh and have had a meal recently. A canary or tame mouse should be taken with the party, and the movements of the animal carefully watched. The party should return on signs of collapse of the animal. They should immediately return if one of their number is affected in any way. Curative. 1. The man should be removed to fresh air without delay. This should mean the pit top. It is useless to attempt treatment in an atmosphere which contains carbon monoxide. 2. The patient should be kept warm. This is of the greatest importance. Several men collapsed more than once after coming round, and were quickly revived by warmth. 3. Warm oxygen should be administered in large quantities. One oxygen cylinder may be made to serve several patients at once by filling football bladders with the gas; the bladders could then be warmed in front of a fire and continually refilled. 4. Artificial respiration, if necessary, should only be done in a pure atmosphere or the patient will be made worse. Schäfer's method is the best. This method was found very useful in men who collapsed after coming round. 5. Injection of strychnine and adrenalin. 6. No exertion should be allowed. The men should be carried home when they have recovered.

4. Trigeminal Neuralgia.—Harris says that the alcohol injection method for trigeminal neuralgia is indicated under the following conditions in any persistent neuralgia: 1. When the site of irritation or injury to the nerve is more or less peripheral, so that the nerve can be injected on the central side of the lesion. No benefit results from alcohol injection of a nerve below the point of irritation. This method is therefore contraindicated in tabetic and in postherpetic neuralgia. 2. When paralysis of the affected nerve will not cause extensive muscular palsy. Thus injection into the sciatic nerve, or into either of the nerve trunks of the upper extremity, is contraindicated. He warns against the following dangers: 1. In injecting into the foramen rotundum, never inject at a greater depth than 5 cm. for an average sized skull, or, a better guide, be careful not to sink the needle more than 7 mm. past the anterior edge of the external pterygoid plate. This precaution will prevent the optic nerve being injured. If the injection is made too horizontally, it will pass beneath the superior maxillary nerve and reach the sphenopalatine foramen, and will be felt in the nose. If directed too high, the sphenoidal fissure may be reached and the branches of the third nerve may be damaged, causing diplopia and dilatation of the pupil. 2. In making the injection for the foramen ovale, for the third division of the fifth nerve, if the needle is directed too low and too deeply, more than 4¾ cm., the pharynx wall or the Eustachian tube may be punctured; if too far back, the middle meningeal artery may be injured, and it is conceivable that if directed much too far back by a person with no experience, even the internal carotid artery or jugular vein might be injured.

LANCET.

June 11, 1910.

1. On the Operative Treatment for Preventing the Destructive Renal Changes in Hydronephrosis and Pyonephrosis, By Sir Henry Morris.
2. Physiology of the Human Labyrinth, By Sydney Scott.
3. The Ear Ornaments of the Masai and the Natives of Kikuyu, By John Bland-Sutton.
4. A Further Study of Spinal Anæsthesia in Children and Infants, By H. Tyrrell Gray.
5. Case of Papilloma Causing Hydronephrosis in a Horseshoe Kidney, By John Morley.
6. Ratbite Fever, By George S. Middleton.

1. Operative Treatment for Fatty Transformation of the Kidney.—Scott says that in pyonephrosis the kidney should be drained through a lumbar incision as soon as ever the diagnosis is established; and even before it is certain, from the evidence afforded by palpation, that the kidney is dilated and sacculated, an incision into it should be made when pyuria, with frequent exacerbations of symptoms, is present. The absolute necessity in many chambered pyonephrosis to make sure that all the chambers or sacculi are opened into and drained. It is folly or worse of attempting to drain a suppurating kidney through an incision in front. Through the loin the route is simple and direct and the exit of the drain or drains is in the most dependent position. When owing to the impossibility of keeping up a satisfactory drainage of all and each of the pouches or sacculi, or when the pyonephrosis is very advanced and old, nephrectomy is the only operation which offers a chance of cure. The knowledge of the complete disappearance of renal secreting structure after prolonged irritation and suppuration teaches us how useless it is to leave within the body an organ affected with such old standing disease. In cutting short the illness by nephrectomy we are but anticipating the complete cessation of function of the kidney by the progressive process of transformation into fat or fibrous tissue, which the organ will undergo if not removed.

4. Spinal Anæsthesia in Children.—Gray observes that, in spinal anæsthesia in children, puncture should be made in the second or third lumbar intervertebral space after the preliminary anæsthetization of the skin with eucaine (3 per cent.), the patient being in the lateral position. The child should be immediately turned over on the back and the pelvis raised for about from fifteen to twenty seconds, always remembering to keep the head and shoulders elevated. By this means the heavy dextrin carries the stovaine to the lowest point; this can be regulated by the curve of the back. The preparations for operation may be commenced directly the child has been turned on to the back, for by the time these are completed anæsthesia will be sufficient to make the incision. The level of the paralysis is

regulated: (a) By the bulk of fluid used—the larger the bulk of fluid the higher will be the resulting anæsthesia; and (b) by the position of the patient. The duration of the anæsthesia can be regulated to some extent by: (a) The quantity of stovaine administered; (b) the height of the paralysis, and consequently the bulk of fluid administered, the higher the anæsthesia extends, the longer will any part below this level remain anæsthetic; (c) the completeness of the paralysis. If the needle is not accurately introduced, so that the whole of the distal lumen is well within the spinal theca, a variable and incomplete paralysis may result which, though possibly sufficient for the operation required, will not last as long as a similar dose introduced well within the theca. This fault in the puncture may lead to unsatisfactory results, even though a free flow of cerebrospinal fluid is obtained; for it must be remembered that the point of the needle may just puncture the dura, with its point only, on the anterior aspect of the space, after penetrating the posterior layer; and that, when the cannula is introduced, its point may then lie outside the space. To avoid this the needle should always be withdrawn, after the puncture, to the greatest distance which permits a free flow of cerebrospinal fluid; the face of the needle point should not be very oblique, but should form a fairly large angle with the axis of the shaft; and the point of the needle should penetrate the dura in the midline. Retching is to be anticipated if paralysis has involved many of the intercostal muscles. Its onset may be expected from ten to fifteen minutes after the injection, and the phenomenon will rarely last longer than from thirty seconds to one minute. This complication has to be reckoned with in high anæsthesia, and since the time of onset is fairly constant the surgeon is given opportunity to guard against any undesirable consequences arising from it. Respiratory pallor is to be expected in a mild degree when the paralysis is high enough to alter the character of the respirations. It is transitory in nature, being easily restored almost to the normal by brandy or by otherwise stimulating the patient, and so inducing a forced inspiration by the overaction of the upper intercostal and accessory respiratory muscles. This manifestation is of quite a different nature from the livid pallor, sweating, and dilated pupils seen in stovaine poisoning. Another factor in the causation of a slight change of color is the fall in blood pressure which occurs about twenty minutes after the injection. Feeding during operation is permissible and even advisable in some cases when anæsthesia is not required above the tenth dorsal segment. If the paralysis is higher than this, feeding is contraindicated because in high paralysis the stomach is usually distended (sometimes to a considerable extent), and in this condition the presence of food is liable to induce vomiting. As to management he remarks that older children should be advised as to what they may expect, and they should be warned of each necessary manipulation. In younger children and in infants the surgeon must rely on the speed with which he can carry out the manipulations, so that the puncture can be made and the injection given before the child is well aware of what has taken place. It is unusual for the resulting disturbance to be as great as in the administration of a general anæsthetic, while many children do not know that anything has been done beyond the hypodermic injection of eucaine.

AMERICAN JOURNAL OF THE MEDICAL SCIENCES

June, 1910.

1. The Treatment of Intestinal Indigestion in Children on the Basis of the Examination of the Stools and Caloric Values,
   By John Lovett Morse and Fritz B. Talbot.
2. The Treatment of Hæmorrhage from Gastric Ulcer,
   By J. Kaufmann.
3. Normal Human Blood Serum as a Curative Agent in Hæmophilia Neonatorum, By John Edgar Welch.
4. The Metabolism of Myasthenia Gravis, with a Suggestion Regarding Treatment,
   By Ralph Pemberton.
5. The Treatment of Spasticity and Athetosis by Resection of the Posterior Spinal Roots,
   By William G. Spiller.
6. The Pathogenesis of the Toxæmia of Pregnancy,
   By James Ewing.
7. Chronic Family Jaundice,
   By Wilder Tileston and Walter A. Giffen.
8. A Study of Murmurs in Pulmonary Tuberculosis,
   By Charles M. Montgomery.
9. Two Cases of Solitary False Neuroma probably Non-malignant, By Edward M. Foote.

3. Normal Human Blood Serum as a Curative Agent in Hæmophilia Neonatorum.—Welch remarks that in normal human serum we find an agent that successfully controls hæmorrhage in the newborn. The causes of these hæmorrhages are probably due to different factors. It is possible that some are true cases of hæmophilia, while others are due to some infection. The hæmorrhages are sometimes due to a bacteriæmia caused by the streptococcus, staphylococcus, and in some cases a bacillus. It has been demonstrated so frequently that it is now a matter of common knowledge that fresh normal human blood serum is often bactericidal. If put into the body of a baby in sufficient quantity, and kept moving by the circulation to elimination, it must surely exert this bactericidal effect. Welch has used it in repeated small and large doses, also in single small and large doses, and it never gives serum sickness or causes anaphylaxis in the human subject. On the other hand, it is a perfect form of food, already digested and ready to be taken up and utilized by the tissues and cells of the body, so that without dissipation of energy regeneration may progress with a maximum of efficiency. In many of these babies with bleeding from the gastrointestinal tract, nourishment from this source is impossible. The alimentary tube is filled with decaying blood, and in most instances there is reversed peristalsis, which militates against digestion, and, added to these, there exists a clouding of the epithelium and considerable desquamation. The food cannot be properly prepared for absorption, and should it be, the circulation is so feeble as to be an obstacle to its removal into the tissues. When placed under the skin normal human blood serum is quite readily removed from the site of injection. He has seen two ounces completely removed within five minutes by gently massaging the skin over the site of injection while administering the dose. It may be that the hæmorrhage is

partly and in some cases entirely controlled by the nutritive effect on the body tissues of the infant. In others it is possible that a thrombokinase is supplied, as suggested by Kottman and Lidsky, who obtained it from animal sera and from the filtrate of the chopped and soaked rabbit livers which they applied locally to check hæmorrhages about the cord. As to the dose of serum to be used in any given case, this depends upon the urgency of the case. One is apt to err on the side of too small doses. It is advisable to begin with at least 10 c.c., and repeat three times a day if the infant is bleeding only moderately. In severe cases it should be given every two hours, and in larger quantities if necessary. It is very important to begin the treatment at the first indication of bleeding, however apparently insignificant. Slight bleeding of the cord may be accompanied by fatal internal hæmorrhage if not stopped immediately. The blood is very easily collected. The apparatus he has devised consists of a rubber cork through which are two perforations. Through one perforation is fitted a U shaped glass tube, to the outer end of which is attached, by means of a piece of rubber tubing, a short aspirating needle having a No. 19 caliber. The needle is cotton plugged into a small test tube, in which it is sterilized. Through the other perforation is inserted a fusiform glass tube containing cotton to prevent contaminating the contents of the flask. A small suction tube is placed on this latter for drawing the blood into the flask. The needle is inserted into a vein at the elbow and the desired amount of blood withdrawn. The blood is allowed to coagulate in a slanting position in the flask, and the serum is withdrawn as rapidly as it separates, and it is then ready for use.

4. **Myasthenia Gravis.**—Pemberton states that in myasthenia gravis there may be marked loss of calcium by the tissues even under circumstances of marked nitrogen retention. The creatinin output may be reduced to a point below normal; the output of creatinin nitrogen expressed in percentage of the total urinary nitrogen may be almost as low as that seen in conditions of true muscular wasting. These facts taken together form a reasonable basis for belief that myasthenia gravis is a disease of deranged muscular metabolism, and that one at least of these two factors (that is, the loss of calcium) may stand in such a causal relationship as to indicate the therapeutical administration of that element.

6. **Toxæmia of Pregnancy.**—Ewing reviews our knowledge of toxæmia of pregnancy and says that notwithstanding the obscurities that still exist, it must be admitted that the past decade has witnessed important progress in our knowledge of the peculiar autointoxications of pregnancy. The earlier studies in pathological anatomy have been reviewed, extended, and systematized, and the interpretation of lesions has been rendered more significant. The recognition of clinical symptoms, especially their wide diversity, has been facilitated, and the true import of early signs has been much more widely accepted. The dangers of chloroform poisoning and its influence in the severe hepatic lesions of many cases has been sufficiently impressed to be generally heeded. In systematic urinary analyses we have a means of recognizing the character and gravity of the metabolic disorder, as well as a basis for instituting hygienic and dietetic measures with a view of forestalling and preventing the dangerous stages of the disease. Urinary analyses may not tell when to empty the uterus, but they may suggest treatment that will make it unnecessary to empty it at all. Finally, the indications for treatment have been more clearly defined. Doubtless there are necessarily fatal forms and stages of all types of toxæmia, but with the great majority of patients the relief of acidosis, the hygiene of the intestine and correction of indicanuria, the careful control of the diet with reduction or exclusion of proteins, and the intelligent use of thyreoid extract, should control the milder cases and greatly reduce the mortality in the severe forms of the disease.

8. **Murmurs in Pulmonary Tuberculosis.**—Montgomery states that murmurs over the chest not demonstrably dependent on cardiac or vascular disease, when listened for carefully, under favorable circumstances and repeated examinations, are found frequently in tuberculosis. These murmurs are usually systolic in time and faint in intensity. They are generally soft and whifflike in character, though they may be quite loud and harsh. In the majority of cases these murmurs are heard repeatedly, and usually intermit only temporarily. The areas where they are most commonly heard, and where their maximum intensity most often occurs, are at the base of the heart, chiefly to the left of the median line, at the cardiac apex (a little over half as often as at the base), and at the inferior scapular angles posteriorly, more often on the left side. These murmurs are more frequent over the front of the chest than at the back; they are more frequent and more widely distributed over the left side in front than the right. They are heard in a relatively small number of cases in the axillæ. They may be very limited in extent or may cover nearly the entire chest. These murmurs are modified at times by position, more often by excitement and exertion. With the possible exception of the left side in front, murmurs in advanced cases are heard more frequently over normal or excessively functionating tissue than diseased tissue, this being particularly noticeable at the bases posteriorly. The ætiology of these murmurs is usually obscure, and causes, probably responsible in a certain proportion of all cases, are hard to establish in individual cases. In about seven per cent. of his cases with murmurs, mitral regurgitation dependent on weakness of the heart muscle was diagnosticated. For prognosis and treatment, little is gained from these murmurs of undetermined origin. Even when they seem to depend on the advance of the tuberculous process they furnish little information unobtainable in other ways. The diagnosis between cases with murmurs due to gross cardiac disease and those without any such cause demonstrable may be rendered very difficult in the presence of pulmonary tuberculosis, especially if it is far advanced. Tuberculosis has many symptoms found in heart disease, and often renders the physical signs of the heart inconclusive, in particular making the size of the heart difficult to determine.

AMERICAN JOURNAL OF OBSTETRICS.

June, 1910.

1. American Gynæcology, By E. P. Davis.
2. Postoperative Cystitis, By J. T. Johnson.
3. The Treatment of Eclampsia by Continuous Sugar Water Instillation, By S. D. Jacobson.
4. Mentrorrhagia and Uterine Fibrosis, By A. Sturmdorf.
5. Mary Putnam Jacobi, By Josephine Walter.
6. Observations on the Mechanism of the Third Stage of Labor, By P. T. Harper.
7. Ectopic Gestation at Full Term, By G. D. Nutt.
8. Fibroid Tumor Complicating Pregnancy and Rendering a Continuance of Gestation Dangerous and Natural Delivery Impossible, By B. F. Baer.
9. Treatment of an Anteuterine Pelvic Abscess by Sequestration and Drainage, By H. A. Kelly.
10. Vaginal Cysts and Their Histology, By G. P. Murray.
11. The Rôle of Waldeyer's Lymphatic Chain in the Economy of Health and the Dissemination of Disease, By C. G. Crane.
12. Diphtheria in Children, By E. M. Sill.
13. The Education of the Atypical Child. The Unusual Child, By S. P. Goodhart.
14. Types of Congenital Symbol Amblyopia, By J. H. Claiborne.
15. Oral Defects a Great Hindrance in the Proper Development of Children; the State's Duty to Cope with These Conditions, By A. Zentler.

2. Postoperative Cystitis.—Johnson pleads for a stricter prophylaxis, the condition in question being regarded as preventable and due to dirty instruments. He also pleads for more active and continuous treatment when the disease has manifested itself not only to bring about an early cure, but to prevent the development of chronic disease. The disease occurs more frequently after abdominal operations, in which there is a combination of traumatism and bacterial infection, as in abdominal hysterectomy in which the bladder is released from its ordinary attachments, its resisting power diminishing. The infecting germs may be already in or upon the tissues traversed by the catheter or they may be conveyed from without. Care and cleanliness with irrigation of the urethra with boric acid solution and the internal use of urotropine are the measures which are recommended for prophylaxis.

3. The Treatment of Eclampsia by Continuous Sugar Water Instillation.—Jacobson believes that this condition is an uræmia due to nephritis and that pregnancy, labor, or the puerperium are merely coincidents. He gives his reasons for this opinion, after discussing and rejecting other theories. The damaged kidneys are unable to eliminate with the urine the poisonous salts which are circulating in the blood. Hence the blood should be diluted, urine and perspiration increased. Dilution of the blood may be accomplished by starving the patient or causing her to take a large quantity of water. The author withholds food from eclamptics three days and gives by mouth only plain or carbonated water. The bowel seemed the best route for introducing the necessary volume of water and the great molecular weight of sugar seemed to favor a solution of this substance as a diluent rather than salt solution. This was tried in two cases, the Murphy method of instillation being used. The results in these cases were satisfactory.

6. Observations on the Mechanism of the Third Stage of Labor.—Harper concludes his paper with the following propositions: 1. The placenta is usually delivered, as an inverted cone, the fœtal surface presenting; the membranes follow, reversed. 2. This may be called the normal mechanism because it occurs in the majority of cases; it may be explained by the action of the uterine forces upon the placenta in its common position in the upper uterine segment, and it is attended by the expulsion of the membranes which are usually intact. 3. Rarely the placenta is delivered as a cylinder, the edge, or the edge and maternal surface presenting; the membranes follow, their anatomical relations preserved. 4. This is the abnormal mechanism which occurs in the minority of cases. It is explained by the action of the uterine forces upon the placenta in its uncommon position in or encroaching upon the lower uterine segment. It is attended by the expulsion of the membranes which are often incomplete and more or less detached.

ANNALS OF SURGERY.

June, 1910.

1. Note on the Neuropathological Cytology of Anæmia, Infections, Graves's Disease, and Surgical Shock, By George W. Crile.
2. Therapy by Bacterins and Tuberculins in Mixed Suppurative Bone and Joint Disease, By De Forest Willard and B. A. Thomas.
3. The Study of the Ætiology of Cancer Based on Clinical Statistics, By Isaac Levin.
4. On the Simulation of Neoplasms by Inflammatory Processes, By C. A. Hamann.
5. Prognosis and Operative Treatment of Fracture of the Base of the Skull, By Joseph Ransohoff.
6. Diagnosis and Surgical Treatment of Œsophageal Diverticula, By Charles H. Mayo.
7. Resection of the Pancreas, By John M. T. Finney.
8. Hepaticoduodenal Anastomosis, By George Emerson Brewer.
9. Wandering Spleen, By Archibald MacLaren.
10. The Separation of the Colon from Its Mesentery, By Frank E. Bunts.
11. Congestion of the Lower Lobe of the Right Lung an Early Symptom in Appendicitis, By John B. Roberts.
12. Removal of the Rectum for Cancer, By William J. Mayo.
13. Choriocarcinoma, By Alexander Primrose.
14. On Momburg's Method of Artificial Anæmia by Suprapelvic Constriction, By Arpad G. Gerster.
15. Old Irreducible Dislocations of the Shoulder Joint, By A. F. Jonas.
16. Operations upon the Appendix, By Clarence A. McWilliams.

2. Therapy by Bacterins and Tuberculins.—Willard and Thomas say that inoculations by bacterins and tuberculins, either alternately or separately depending upon the condition of the patient, furnish a valuable accessory therapeutic measure in the routine antituberculosis, hygienic and surgical treatment of mixed suppurative bone and joint disease. Bacterins, especially tuberculins, are more potent agents for evil than for good, unless competently administered. Carefully employed, patients do better with than without bacterins, their detention in the hospital is materially shortened, and complications, if they occur, are fewer and less severe. The therapy is superfluous in mild cases where simple operation and time will effect cure; nor is it applicable to neglected cases with prolonged suppuration, characterized by bacteriæmia, grave supræmia, and amyloid disease. So long as the temperature fluctuates above 100° F., autogenous bacterins, obtained by culturing and reculturing the suppuration found to contain variable bacteria from time to time, are administered. Tuberculin inoculations are begun when the temperature falls to 100° F. or preferably lower. Better results have attended the pro-

cess of active immunization, where just as in tuberculin therapy pure and simple, the treatment has been commenced with relatively small bacterial inoculations, progressively increased to the therapeutical limit, rather than by recourse to large doses, thereby establishing immunity in the former case and in the latter avoiding anaphylaxis. Tuberculin alone in the earliest stage of acute tuberculosis has not proved of noteworthy value, probably due to the fact that the disease progresses too rapidly for the production of immunity, a result which necessarily consumes months. Studious observations of the clinical symptomatology have invariably sufficed to control the inoculations, the opsonic index as a guide proving not only impractical but frequently erroneous.

3. **Ætiology of Cancer.**—Levin has collected data of 4,000 cases of cancer from hospitals of New York, Brooklyn, and Philadelphia, and from surgeons all over the United States. He thinks that it appears evident that a local trauma or previous disease of the affected organ is of less importance in the causation of cancer than the increased vulnerability and lessened resistance of the organism, caused by the ever increasing strain of modern life. This is certainly the only explanation that may be offered for the increasing frequency of the occurrence of cancer in civilized communities. That this increase is not only apparent is very evident from the mortality statistics of the United States in 1907, which show a ratio of 73.1 per 100,000 population, as compared with the ratio of 70.8 in 1906. The investigation has clearly shown that an analysis of a large number of cases of carcinoma and sarcoma, well prepared both clinically and anatomically, is the main if not the only method for the study of the ætiology of cancer and consequently for the investigation of the possible means of prevention of the disease. Without such a cooperation of purely clinical study, experimental cancer research on lower animals will hardly produce results which may have a direct bearing on the understanding of the ætiology of human cancer.

5. **Fracture of the Base of the Skull.**—Ransohoff says that there will always be a large mortality connected with basal fractures; death resulting from primary shock, brain laceration, or hæmorrhage. Thirty-seven per cent. of the fatal cases die within six hours or less, and fifty-six per cent. die within twelve hours. It is not probable that the mortality of this class can ever be reduced with or without operation. Twenty-three per cent. of the fatal cases die during the second twelve hours of the first day; and six per cent. die during the second day. They are the cases in which the coma is not profound, in which the pupils are not fixed, in which the breathing is not stertorous, and in which there is not complete muscular relaxation. With a slow full pulse and lumbar puncture indicating hæmorrhage and increase of intracranial pressure, a trephining operation is indicated. In the doubtful cases, an operation is indicated. In this class of cases, where facilities for the major operation of trephining are not at hand, repeated lumbar punctures should be essayed. This procedure may be destined to take the place of decompressive operations. There is a large group of patients in whom there is complete consciousness or in which there is a somnolence or milder degree of coma, and in whom the concomitant symptoms do not indicate a grave intracranial trauma either to the brain or its vessels. The pupils though uneven react; involvement of one or more cranial nerves may be evident. The symptoms singly or collectively are not ominous at any time. Eighty per cent. of this class of patients have a tendency to get well with or without operation. They should not be operated upon unless the symptoms indicate an increase of intracranial pressure from hæmorrhage or beginning cerebral œdema, or distinct localizing (cortical) symptoms. There is a distinct class of cases in which operation is indicated. They are cases which seemingly not severe in the beginning grow progressively or suddenly worse, showing signs of increased intracranial pressure. Decompressive operation may save a considerable proportion of them. It has yet to be determined where the trephining should be done to obtain the best results. Since most fractures involve the anterior or the middle fossa, subtemporal trephining is doubtless the procedure oftenest indicated. When, however, an hæmatoma in the mastoid or occipital region indicates an involvement of the posterior fossa, the operation should be subtentorial. To relieve the subtentorial tension by an opening made in the temporal region is illogical and may be dangerous.

AMERICAN JOURNAL OF SURGERY.

June, 1910.

1. A Modified Technique for the Combined Operation of Extirpation of the Rectum, By James P. Tuttle.
2. Observations on the Treatment of Placenta Prævia, Based on the Study of Forty-two Cases, By A. A. Hussey.
3. Tuberculosis of the Falloppian Tubes as an Ætiological Factor in Ectopic Gestation, By A. Miles Taylor.
4. Some Observations on the Removal of Tonsils, By Norton L. Wilson.
5. The Surgical Significance of Nystagmus and Vertigo, By Percy Fridenberg.
6. Perforation in Typhoid Fever, By Francis E. DuBois.
7. Gastrocolic Fistula Due to Carcinoma; Operation, a Case Report, By W. H. Axtell.

2. **Placenta Prævia.**—Hussey observes that the diagnosis of a placenta prævia should always be followed promptly by the termination of pregnancy. The main indications in the treatment are to control hæmorrhage, to shorten the first stage of labor, to protect the mother from traumatism and sepsis. Next to hæmorrhage, lacerations of the lower uterine segment present the gravest danger and are always caused by rapid dilatation of the cervix or attempting to deliver through a birth canal only partly dilated. If too much consideration for the life of the child is felt, too little consideration for the life of the mother may be shown, and this is justified neither by theory nor by results. In cases near term, when the child is alive, the interests of both mother and child can best be protected by the use of the Pomeroy bag. Marginal cases may call for little treatment beyond tamponade or rupture of the membranes, while partial and complete cases will always demand active interference. With an undilated cervix the Pomeroy bag affords the best means of controlling the hæmorrhage and dilating the cervix Those unaccustomed to its use will get the best results from combined version. Skill in the obstetric methods of treatment will rarely be required.

4. **Removal of the Tonsils.**—Wilson prefers

ether as an anæsthetic for the removal of tonsils. If severe hæmorrhages occur there are available many forms of hæmostats, but the only surgical procedure is to catch the bleeding vessel with a pair of long hæmostatic forceps and twist or ligate it. For this purpose Yankauer's instrument for tying knots after suturing the mucous membrane has been found to be a most valuable aid. The method of illumination is a very important one. The best illumination is to be found in placing the patient in an upright position before a window and to use the light of day. The next best is electric light, reflected from a head mirror. In the prone position he uses the direct light from a 32 candle power electric hand light or has an assistant hold that light in such a way that it can be reflected into the throat from a head mirror. He does not remove the second tonsil until after the first has ceased to bleed, thereby keeping the field comparatively free from blood. Instead of taking five minutes to complete the operation, as do most of the operators, about fifteen minutes are consumed, and he has the satisfaction of feeling that his patients are not bleeding. He invariably inspects the wound before the patient is removed from the table, in order to be satisfied not only that it is not bleeding, but also that there are no tags of adenoid tissue remaining. The sterile finger is a valuable aid not only for diagnostic purposes, but also for separating the tonsil.

5. Surgical Significance of Nystagmus and Vertigo.—Fridenberg says that in labyrinthine nystagmus the following phenomena are characteristic: 1. The affected side is the weaker. In standing or sitting the body inclines or falls to the diseased side. In walking or hopping there is a deviation to the diseased side, the patient does not stand securely on the leg of that side, and the body can be more easily pushed to that side. The body muscles tire rapidly, so that in hopping, the jumps not only deviate from a straight line, but the distance between them becomes smaller and smaller, until finally they "mark time," and are made on one spot. Falling can be prevented by merely giving the patient a finger, as the slightest tactile sensations will compensate for the labyrinthine defect. Falling is sudden, unexpected, and complete. The patient collapses without regard for possible injury and without power of preventing or compensating the loss of balance. so that the necessary precautions to guard against injury to the patient should always be taken by those who institute these tests.

Proceedings of Societies.

AMERICAN SURGICAL ASSOCIATION.

Annual Meeting, held in Washington on May 3, 4, and 5, 1910.

The President, Dr. Rudolph Matas, of New Orleans, in the Chair.

(*Continued from page 1358 of volume xci.*)

Thoracic Surgery on Human Beings. — Dr. Willy Meyer, of New York, read a paper in which he said that thus far he had operated upon ten persons with the help of his differential pressure apparatus for affections of the pleura, lung, and œsophagus. After discussing the effect of differential pressure in more rapidly bringing to a close the empyema cavity, as well as its usefulness in the after treatment, he dwelt particularly on the cases of two young patients, six and eleven years old respectively, who had suffered for years from bronchiectatic abscess symptoms. He extirpated a lobe of the lung in each case, but neither patient recovered.

Three times exploratory thoracotomy was done for cancer of the œsophagus, with recovery. In order to do good surgical work when operating for a malignant stricture of the œsophagus, he found it necessary to get the scapula out of the way. He therefore proposed as a preliminary the Schede-Friedrich flap operation, by which the entire shoulder girdle was turned up, thus permitting the surgeon to make his incision into the thoracic cavity wherever required; often two incisions were necessary. He preferred the intercostal incision to resection of a rib or ribs. He presented illustrations which demonstrated the procedure.

On March 31, 1910, he had for the first time proceeded in this way for a cancer of the œsophagus in a patient, forty-three years of age. It was found that the malignant tumor extended from about an inch and a half above the cardia to the aortic arch. After division of the œsophagus and inversion of the lower stump through the sixth intercostal space, the third interspace was opened, and the healthy portion of the œsophagus reached, to the outer side of the common carotid artery, after proper division of the costal pleura; then the entire diseased portion was shelled out and brought in front of the aortic arch. To the operator's dismay, it was found in the course of this latter part of the operation that the growth involved the right pneumogastric nerve; it was impossible to push the nerve off; it had to be divided at the lower end of the tumor, and again interfered with in amputating the œsophagus above the upper border of the tumor. The proximal end was also inverted by a double purse string suture, the intention being to do gastrostomy two or three days later. The interference with the pneumogastric nerve had a deleterious effect upon the heart's action, which up to this time had been good. The operation was well completed, but in spite of intravenous infusion the patient succumbed shortly afterward.

It was pointed out that the only hope of operative success in these cases lay in an early operation; certainly before the intimately adjacent pneumogastric branches were involved, and the first step of such an operation should be to free these nerves. Their involvement would more or less decide the operability or inoperability of the given case. Additional experimental work was required in order to determine how far we were permitted to divide the pneumogastric on one side of the œsophagus should the growth within the latter have encroached upon the nerve. Involvement of the nerve on either side was an absolute contraindication to going ahead with the operation. Interference with the pneumogastrics during the operation greatly affected the heart's action as well as the respiration. The ordinary stimulants, inclusive of intravenous infusion, were of no avail. Sudden changes in differential pressure, however, had been found of great value.

The author briefly discussed how best to carry out in such emergency artificial respiration, which he was able to do also with his differential pressure apparatus. Up to the present time resection of the œsophagus had a mortality of one hundred per cent.

End to End Intestinal Anastomosis by the Invagination Method.—Dr. C. L. Gibson, of New York, said in this paper that end to end intestinal anastomosis by telescoping one segment into the other had been practised from time immemorial, but at present had no recognized position in surgery. As a result of animal experiments and five successful cases, the author believed that with his present technique it furnished a method for which there was a demand, particularly in the surgery of the lower end of the colon. The technique was as follows: The upper cut edge of the gut was seized with two Kocher clamps and introduced by these into the lumen of the lower end and maintained there by an assistant. The extent to which it was feasible to accomplish this invagination would vary. The gut was rotated about a quarter of a circle, so that the nonperitoneal covered surfaces did not entirely approximate in the circumference. Eight to twelve interrupted silk sutures were introduced. A Lembert suture was begun on the lower segment, the needle issuing just short of the cut edge; on the upper segment the needle was introduced just above the line where the cut edge of the lower segment lay against the intact wall of the upper. When the knot was tied the free cut edge had been turned inward, and only the peritoneal surfaces were in contact. A continuous running suture was applied over this area, further invaginating the first ones, the Kocher clamps being previously withdrawn.

Postoperative Intestinal Obstruction. — Dr. George Woolsey, of New York, read this paper. The condition, he said, was of common occurrence by reason of the frequency of abdominal operations, in spite of improved technique.

It was classified as early and late (Broca), mechanical and dynamic (Mikulicz). Mechanical ileus comprised strangulation and obturation. Dynamic, or paralytic, obstruction was most often due to sepsis; some cases were due to postoperative atony, others to disturbance of innervation.

There were two great causative factors, septic and mechanical. Strangulation was usually due to a band or volvulus or both. When the blood supply was cut off paralysis of the gut was added. Obturation commonly depended on augulation. The distended proximal arm of the loop pressed on the distal arm and closed it like a trap, the adhesion of the end of the loop preventing it from being straightened out by peristalsis. Adhesions were most often found in or near the pelvis. Most adhesions disappeared in time. The factors determining obstruction by adhesions were adhesions of gut in an abnormal position and idiosyncrasy for the formation of many and firm adhesions. Other causes of mechanical obstruction were secondary abscess, causing pressure and usually a valvelike closure, as in cases of adhesions; the Trendelenburg position; and pressure of the root of the mesentery on the duodenum, causing arteriomesenteric ileus or acute dilatation of the stomach. A similar result (paralysis) might be due to sepsis, the most common cause; to handling of intestine, causing atony; or to trauma of the nerve supply, as in extraperitoneal operations, etc. Sepsis probably acted mostly by a reflex paralysis on Auerbach's plexus. Peristalsis might be reflexly inhibited through splanchnic nerves (Cannon and Murphy). Overdistention might arise from the atony due to handling or traumatism of nerves or plexuses. Overdistention might cause obstruction by giving rise to paralysis, augulation, or volvulus. Obstruction most often followed appendicitis or removal of the appendix, and next most often pelvic conditions, especially ovarian cysts. Death was due to bacteriæmia in septic peritonitis. Where there was no peritonitis death was attributed to autointoxication. Braun denied this and alleged terminal sinking of blood pressure due to basal anæmia from great blood stasis in the splanchnic area, and said that drainage of the bowel favored a cure by relieving congestion in the splanchnic area, not by avoiding autointoxication. Several experiments confirmed this.

The diagnosis was easy from the symptoms in late cases. If morphine had to be repeated for pain, one should operate for obstruction. In many cases we could distinguish between strangulation and obturation by "peritoneal shock," the intensity of the onset and symptoms. In some cases we could ascertain the position of the obstruction by the position of early pain, distention, exaggerated peristalsis, the character and onset of vomiting, von Wahl's sign, etc. In early cases the diagnosis was not so easy, being obscured by peritonitis, operative trauma, and the sequelæ of anæsthesia. Where peritonitis was present we must distinguish between it and obstruction. Many of the symptoms were identical. Rigidity was the important sign of peritonitis, absolute constipation of obstruction. If the latter could not be relieved, there was obstruction. Some early causes were of mechanical origin. It was important but difficult to distinguish them. The presence or absence of pain, peristalsis, distention, and other signs helped to determine the question. The possibility of acute dilatation of the stomach (symptoms enumerated) and of obstruction with many symptoms lacking must be remembered.

The problem was to prevent sepsis, operative trauma, and adhesions, to which nearly all cases were due. Hence we should operate in all cases of appendicitis as soon as the diagnosis was made. When septic peritonitis was present modern technique (Murphy's) would cure most cases and prevent paralytic ileus. The opposite plan was advocated by some, i. e., excitation of peristalsis to distribute germs and increase hyperæmia of the peritonæum and thereby the autolysis and resorption of the pus. Physostigmine or atropine was used by some before and after the operation. The real field for this was in postoperative atony. To prevent the atony, we should avoid rough and undue handling of intestines. When early distention was marked and increasing, we should produce early action of the bowels by enemata of various kinds, with or without physostigmine. Stupes and lavage were also very useful. Careful postoperative treatment as to diet, digestion, and bowel movement was very essential prophylactically.

Adhesions were a prolific source of obstruction.

Could we prevent them? Not altogether. It was largely a matter of careful technique. We should operate early, rapidly, yet carefully, and avoid drainage. If drains were necessary, the kind of drains and their position were of great importance. We should remove sources of infection, avoid displacing of bowels, cover denuded peritonæum if possible, and encourage early peristalsis and frequent change of position after the operation. Could we prevent the reformation of adhesions? No, but we might minimize them. A great variety of substances had been interposed between the raw surfaces. Not one was a panacea. Mucilage was apparently the best.

The treatment of actual obstructions was operative. In late obstructions we should make an ample incision over the site of obstruction if known; otherwise do an exploratory operation, which should be early. Collapsed and distended coils would guide to the obstruction. If the gut was not viable, we should resect and anastomose.

In early obstructions palliation by enemata, physostigmine, lavage, etc., should not be persisted in too long. Most patients were operated on too late. If a mechanical cause was suspected, it called for laparotomy and relief of the cause. If it was paralytic obstruction, enterostomy with flushing and siphonage should be employed. Enterostomy should be done earlier to avoid the present poor results. In the early obstructions prophylaxis had given best results and made them much less frequent.

Dr. Charles H. Mayo, of Rochester, Minn., wished to testify to the invagination method being a good one in the removal of tumors low in the sigmoid, or at the upper rectum; in fact, it was about the only way one could get a union.

Dr. John B. Deaver, of Philadelphia, reported several illustrative cases.

Dr. Albert J. Ochsner, of Chicago, said that, if immediately upon the appearance of nausea or gaseous distention gastric lavage was instituted, there would be fewer instances of intestinal obstruction, following shortly after operation. As regarded intestinal obstruction due to conditions appearing many weeks after an operation, his observation had been that there was practically no mortality except in those patients coming under treatment after having received cathartics.

Dr. E. Wyllys Andrews, of Chicago, said that end to end anastomosis required for success that we get the lumen at once, and this was not true with the McGraw ligature; but if we could devise a method by which all the advantages of this ligature could be strengthened by obtaining the open lumen immediately we should have an ideal method.

Dr. Alexander H. Ferguson, of Chicago, said, in regard to operative obstruction and the prevention of adhesions following operations, that for four years he had used bismuth subgallate, smearing it over all raw surfaces, with most complete satisfaction.

Dr. Arpad G. Gerster, of New York, thought that, if we were to make headway against obstructions caused by adhesions, we must first know the cause of the adhesions, and this we did not know at present. Many causes had been exploited, the use of packings, the handling of the intestines, and other, mostly traumatic, lesions of the peritoneal coat, but we had seen in the presence of the greatest traumatism that could be inflicted on the intestine that adhesions did not form. Here the pathologist and experimental surgeon must come to our aid. He believed that the cause must be looked for in certain conditions of the blood.

Abnormal Position of the Duodenum.—Dr. G. E. Armstrong, of Montreal, read a paper in which he said that the duodenum was singularly constant in its relations, course, and length; any exceptions were exceedingly rare and worthy of note. In the case reported the duodenum ran to the right and then turned downward external to the hepatic flexure, ascending colon, and cæcum, and, merging into the jejunum, passed from without inward below the cæcum into the small intestine area. The duodenum was completely surrounded by peritonæum. It had a long mesentery throughout and could easily be held two or three inches in front of the abdominal wall. The head of the pancreas, closely applied to the duodenum, was visible and palpable between the layers of the duodenal mesentery, and readily followed the duodenum when the latter was brought outside the body. Instead, therefore, of passing across the second lumbar vertebra and behind the transverse colon and superior mesenteric artery, it retained an early embryological position. There was of course no ligament of Treitz and no fossa duodenojejunalis. The condition was clearly one of arrested development. The cæcum in this case did not mount upward to the lower hypochondrium and did not pass in front of the loop of the duodenum. The cæcum did not descend to its usual final resting place in the right iliac fossa. It was high, completely surrounded by peritonæum, very movable, and could be brought out through the epigastric incision and held eight inches in front of the body.

Dr. Maurice H. Richardson, of Boston, reported a case in which the appendix, the gallbladder, the liver, and the ileocæcal valve were on the left side, the spleen on the right side, and the heart on the right side.

Dr. Emmet Rixford, of San Francisco, placed on record a case of failure of rotation of the primary gut. This condition was probably to be explained on the basis of adhesions of the cæcum to the parietal peritonæum as the result of a fœtal peritonitis.

Dr. Leonard Freeman, of Denver, had had a case in which acute dilatation of the stomach followed an unimportant pelvic operation, and the autopsy showed the duodenum passing directly beneath the liver and firmly attached to the posterior abdominal wall and around the right side as far as the hepatic flexure of the colon.

Dr. Joseph A. Blake, of New York, had met with two cases of abnormal position of the duodenum. He did not think there was apt to be dilatation in such cases, as the mesenteric vessels did not cross the duodenum, and the duodenum, instead of being bound down, was usually free.

Dr. Alexander Primrose, of Toronto, emphasized the fact that these conditions of abnormity in the position of the duodenum might occur without giving rise to the slightest symptoms.

Dr. Joseph C. Bloodgood, of Baltimore, recorded one other anomaly of the intestinal tract which he thought must be very unusual, namely, absence of the appendix.

Hepaticoduodenal Anastomosis.—Dr. George E. Brewer, of New York, reported the case of a patient admitted to the Roosevelt Hospital suffering from acute cholecystitis. Following cholecystectomy there occurred extensive sloughing of the wound, which was followed by a complete biliary fistula. At the end of seventy-five days, as no bile was passing into the bowel, the abdomen was reopened and the fistula followed down to the common hepatic duct. As no trace of a common duct could be found even after reflecting the duodenum and exposing the head of the pancreas, it was assumed that it had been destroyed by the suppurative process which followed the primary operation. A rubber drainage tube three inches in length was introduced into the hepatic duct and also through the duodenum by a stab wound at its upper border, and was secured in these two situations by two purse string sutures. A mass of omentum was then wrapped around the tube, extending well beyond its introduction into the hepatic duct and duodenum, with a view to create a new common duct after the manner suggested by Sullivan. The abdominal wound was closed, a small cigarette drain being allowed to remain at its upper angle. From that time no bile appeared in the wound. The bowels moved on the third day as the result of an enema, and the stools contained an abundance of bile. The reconstructed duct continued to perform its function until after the man's discharge from the hospital, some four or five weeks after the last operation. Since then he had had two or three attacks of fever associated with jaundice, which disappeared in two or three days. At the present time he was still jaundiced, although some bile was present in the stools. Dr. Brewer asked for advice as to further treatment in case the newly constructed duct became totally occluded.

Dr. Alexander H. Ferguson, of Chicago, said that since the observation that, if all the bile was directed into the hepatic flexure of the large bowel the patient did not suffer from the lack of bile (which observation, he believed, was first confirmed by Mayo Robson), he had followed this technique in at least half a dozen cases with extremely gratifying results.

Dr. Joseph C. Bloodgood, of Baltimore, reported an anastomosis of small intestine by opening the transverse colon as in posterior gastroenterostomy, sewing a long loop of the small intestine through the transverse colon, and suturing it to the gallbladder.

Resection of the Pancreas.—Dr. J. M. T. Finney, of Baltimore, said that the principal object of this communication was to record the successful removal of a primary solid tumor of the pancreas. The operation involved the resection of the entire middle portion of the gland, leaving only a small piece of the head and the tail respectively, and necessitating a reunion of these segments by suture. A search of the literature revealed records of but sixteen other undoubted cases in which the pancreas had been resected, either in whole or in part, for primary tumor of the gland. A review was given of the recent advances of surgery of the pancreas due to experimental and clinical work. The difficulties of operating upon the pancreas were referred to and the best methods of avoiding and controlling the same. The best methods of dealing with pancreatic fistulæ were next taken up. The diagnosis of primary solid tumors of the pancreas was made usually by exclusion, and it was not always possible beforehand. Different routes for attacking pancreatic tumors were discussed and the various operations which had been suggested were described. These were so difficult and dangerous as to prevent their general use.

Dr. M. L. Harris, of Chicago, mentioned the case of a policeman shot with a 38 calibre bullet which entered just below the twelfth rib on the left side and was found just beneath the skin a little to the right of the median line between the eighth and ninth ribs. The track of the bullet from before backward was through the right lobe of the liver, the lesser curvature of the stomach, the middle of the pancreas, practically bisecting the organ, and the left kidney. The stomach was sewed up, then the pancreas, and as close an approximation of parts made as possible. Drainage front and back was established. A fistula resulted, but closed in about three months, and the patient fully recovered.

Dr. G. E. Armstrong, of Montreal, said, with regard to the mobility of pancreatic tumors, that he would like to mention a case in which there was a large pancreatic cyst which for a long time, because of its mobility, was considered to be a growth in the stomach.

Dr. Willy Meyer, of New York, had had two cases in which the tail of the pancreas was tightly adherent to the existing tumor. He put a piece of chromicized gut around it and divided the distal end with the Paquelin cautery. Both patients recovered.

Dr. Rudolph Matas, of New Orleans, reported an additional case of unusual character, thrombosis of the splenic artery incidentally involving the pancreatic arterial supply, causing degeneration of the organ from the head to the tail, associated with multiple tumor formation in the spleen. The spleen and three quarters of the pancreas were removed and the patient recovered from the operation, but died about three years later from a slow fever.

(*To be continued.*)

Book Notices.

[*We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.*]

Entérocolite. Estomac et système nerveux. Par le Docteur L. Pron, membre adhérent de la Société de médecine de Paris, correspondant national de la Société de Thérapeutique. Paris: Jules Rousset, 1910. Pp. 132.

In this brief compilation of symptoms, diagnosis, and treatment of enterocolitis there are clinical notes on a number of cases which point unmistakably to chronic disease of the appendix as the cause of the

membraneous enteritis which is so often a prominent symptom of this condition. These patients, who have often suffered for many years, promptly recover after operation, and it is curious that the author apparently has no suspicion of the well known connection between mucous colitis and chronic appendicular disease. On the other hand, the relation between splanchnoptosis and enterocolitis is clearly recognized. The author is justly skeptical as to the value of the much vaunted Bulgarian lactic acid bacillus in intestinal diseases.

Consumption. Its Prevention and Home Treatment. A Guide for the Use of Patients. By H. Hyslop Thomson, M. D., Medical Superintendent, Liverpool Sanatorium. London: Henry Frowde (Oxford University Press) and Hodder & Stoughton, 1910. Pp. 75. (Price, $1.)

We have in this little volume, based on a series of lectures delivered to patients in the Liverpool Sanatorium, simple, practical instruction in the essentials of the hygiene and home treatment of tuberculosis. Diet, baths, rest and exercise, the use of the thermometer, occupation, the arrangement of the bedroom and living rooms for the consumptive, and the importance of routine and discipline are some of the subjects considered. There have been many books similar in scope written in recent years, and this is one of the best of its kind that we have seen.

Diseases of the Stomach and Intestines. By Robert Coleman Kemp, M. D., Professor of Gastrointestinal Diseases in the New York School of Clinical Medicine, Visiting Gastroenterologist to the New York Red Cross Hospital, etc. With 280 Illustrations, some in Colors. Philadelphia and London: W. B. Saunders Company, 1910. Pp. 766. (Price, $6.)

The entire field of gastric and intestinal diseases is well covered in this ample volume, and Dr. Kemp is to be congratulated upon his achievement, which is at once a credit to American medical authorship and to his own industry. With a wealth of references to the recent literature of his subjects and a generous recognition of the work of others, there is much valuable material worked out independently by the author, especially in the methods of examination of the stomach, gastrodiaphany, his studies of splanchnoptosis, enteroclysis, and many practical points in treatment. An unusual feature is the inclusion of typhoid fever in a work on diseases of the stomach and intestines. Noteworthy chapters are those on gastroptosis, intestinal obstruction, and diverticulitis. It would seem that in the sections on the medical treatment of appendicitis some mention should have been made of the administration of castor oil, which is in favor in Germany and is endorsed by as high a surgical authority as Sonnenburg, in properly selected cases. In general the divisions on treatment are especially full, a feature which will be appreciated by the practitioner. Where many therapeutic methods are given it would have been desirable for the author more often to have indicated his own preference as to those which he has found most useful. We regret to observe a considerable amount of space given to the trypsin treatment of carcinoma, which in our opinion has been thoroughly discredited. The writer also stands almost alone among clinicians in his unqualified approval of the low proteid diet of Chittenden. These are, however, very minor points of criticism where there is so much to commend, and we are confident that our good opinion of the merits of Dr. Kemp's excellent work will be endorsed by the profession generally.

Initialerscheinungen der zerebralen Arteriosklerose und kritische Erörterung ihrer Pathogenese. Von A. Pick. Halle a.S.: Carl Marhold, 1909. Pp. 32.

In this address before the Marienbad Medical Society the author discusses the initial symptoms of arteriosclerosis of the brain, the early recognition of which is of great importance to all physicians in general practice. The cutaneous parasthesis, disturbances of the special senses, headaches, vertigo, lapses of memory, impairment of intellectual creative power, lack of initiative, drowsiness, intermittent claudication, insomnia, intolerance for alcohol, and in some cases the perverted eroticism accompanying beginning senility are explained as having their origin in atheromatous degeneration of the cerebral vessels.

Die Indikationen zu chirurgischen Eingriffen bei inneren Erkrankungen. Für den Praktiker bearbeitet von Prof. Dr. Hermann Schlesinger, k. k. Primar-Arzt im k. k. Allgemeinen Krankenhause in Wien. Mit einem Anhange von Prof. Dr. Julius Schnitzler, k. k. Primar-Arzt im k. k. Krankenhause Wieden in Wien. Zweite, vollkommen umgearbeitete und erweiterte Auflage. Jena: Gustav Fischer, 1910. Pp. ix-614. (Price, M. 12.)

The first edition of this book appeared in 1903. The past seven years have brought so much that is new that the book has been entirely rewritten, and not only have its contents been greatly altered, but the general appearance of the book has changed from a work published in three parts to one of one volume.

The book is a practical one, as it helps the general practitioner, the family physician, to decide and advise his patients for or against an operation; and not only the physician, but the surgeon also will derive much instruction from the perusal of the book. The style of adding the references at the end of each chapter or division can only be recommended and should find universal adoption.

Die Cholelithiasis. Von L. Aschoff, Professor der allgemeine Pathologie und pathologischen Anatomie in Freiberg i.B., und A. Bachmeister, früh. Assistenten am pathologischen Institut, etc. Mit 18 lithographischen Tafeln und 18 Abbildungen im Text. Jena: Gustav Fischer, 1909. Pp. 117.

In this elaborate monograph there is contained a minute histological and pathological study of gallstone disease, which does not readily lend itself to adequate review in the brief limits of a book notice. The authors do not consider it proved that all cases of cholelithiasis are due to infection. The *Bacterium coli* and typhoid bacillus are the bacteria most frequently found in diseased gallbladders. There is no consideration whatever of symptomatology or treatment, although there is nothing in the title of the volume to indicate this fact. The work is beautifully illustrated with fine plates in color and numerous well executed drawings.

La Tension artérielle en clinique. Sa mesure, sa valeur séméiologique. Par Dr. Louis Gallavardin, médecin des hôpitaux de Lyon. Paris: G. Steinheil, 1910. Pp. 206.

We have here an elaborate and minutely detailed monograph on arterial pressure with very full de-

scriptions of the instruments and methods employed in taking graphic records. In the last chapter there are even given mathematical formulæ and equations, based upon the observations of Strassburger and Zigerstedt, for determining the mechanical efficiency of the heart in exact figures. There are so many sources of error in this kind of work that we are much disposed to doubt the value of conclusions based upon such findings, and feel that their importance has been overrated. Opposed to those writers who regard the sphygmomanometer as an instrument of great diagnostic value are others equally competent who regard it as little more than a medical toy. James Mackenzie has recently stated that the trained finger is the best means of estimating the pressure of blood in an artery.

MEDICOLITERARY NOTES.

The essence of practice is practice. Patients, especially surgical patients, generally have to be treated where they are stricken, usually under any but ideal surroundings. Combating the wretched complications imposed by poverty in the humble tenement is part of the duties of the physician, the surgeon, and especially the accoucheur, duties not to be learned in the beautiful theatre of the richly endowed hospital. Another severe complication of private practice, to be studied only in private houses, is the presence of relatives, their septic persons and reactionary ignorance. Tact is of prime importance in the equipment of the practitioner and must be learned from him. Tact in the hospital ward is replaced, well or ill, by an attitude of mind ignoring the personality of the patient and tending to consider him simply as a "case."

* * *

Professors who work in laboratories get results *in vitro* that are very charming and satisfying to the college mind, but when these etherealized conclusions come to be applied to the body of a low browed steel worker who has got himself entangled in machinery or to that of a wreck in the throes of delirium tremens, they are violently dissipated to give place to a coarse use of the hypodermic syringe, cotton bandages, soap and water, and other intensely practical measures whose value has been ascertained in the arena of life, where conditions are unsuited to fragile test tubes.

* * *

To teach the practice of medicine, therefore, practitioners thereof are required. The pale, ascetic, bookish weaver of theories has his place, but that is not at the bedside or in the surgical amphitheatre, where acute vision, prompt judgment, and a strong arm, trained by long practice to well nigh reflex action, outweigh all the attenuated spinnings of the schools.

* * *

The Institutes of Justinian, published in 533, borrowed certain legislation concerning venereal disease from the Twelve Tables. The victim was ordered to be treated as follows, no exception being made for sufferers from *syphilis insontium:* "Not by sword or fire or any ordinary penalty shall the guilty be punished; but, sewed in a sack along with a dog, a cock, a viper, and an ape, he shall be cast into the sea or into a neighboring river, in order that he shall lack the elements even before death, that heaven may be lost to his eyes and the earth to his body." From the fourteenth to the sixteenth century syphilitics were banished from Paris, like lepers from Jerusalem, and the penalty for returning to the city was to be thrown into the Seine.

* * *

Experienced therapeutists seem to agree that there is no direct aphrodisiac in the Pharmacopœia. Abstinence and systemic tonics are the sole reliance in sexual neurasthenia. In its turn damiana and *Echinacea angustifolia* each created a following, but few now believe in either. The latest claimant to aphrodisiac honors is chromium sulphate, which was probably launched by some joker with less conscience than misplaced humor. Any direct action upon the nerve centres being promptly denied, it was then alleged to act upon the enlarged prostate gland, causing involution and diminished irritability. A priori, at least, such a contention is ridiculous; no sulphate has any such action. Chromium is used in the arts to give rigidity to steel.

* * *

The news that a certain senator from the West, notedly refractory to the caprices of fashion, has assumed a silk hat may be of interest to those intending to visit the next meeting of the American Medical Association, which takes place in St. Louis. It would be a remarkable result of the whirligig of time if the Easterners were to be recognized at that convention by the absence of the headgear the sight of which used to fill the Western pioneers with scorn and contumely, while the progressive successors of the latter were each adorned with the latest capital triumph from Fifth Avenue, Bond Street, or Olive Street.

NEW PUBLICATIONS.

Jellett, Henry.—A Manual of Midwifery. For Students and Practitioners. With Assistance in Special Subjects of W. R. Dawson, H. C. Drury, T. G. Moorhead, and R. J. Rowlette. Second Edition. With 17 Plates and 557 Illustrations in the Text. New York: William Wood & Co., 1910. Pp. xi-1210. (Price, $6.)

Castellani, Aldo, and Chalmers, Albert J.—Manual of Tropical Medicine. University Series, Ceylon Medical College. New York: William Wood & Co., 1910. Pp. xxv-1242. (Price, $6.)

Epstein, D.—Diagnostisch-therapeutisches Taschenbuch der Tuberkulose. Ein Leitfaden für den praktischen Arzt. Berlin und Wien: Urban & Schwarzenberg, 1910. Pp. viii-143. (Price, 5 M.)

Von Hansemann, Prof. Dr.—Atlas der bösartigen Geschwülste. Mit 27 lithographierten Tafeln. Berlin: August Hirschwald, 1910. Pp. vi-50. (Price, 9 M.)

Schall, Hermann, und Heisler, August.—Nahrungsmitteltabelle zur Aufstellung und Berechnung von Diätverordnungen. Für Krankenhaus und Praxis. Zweite, bedeutend vermehrte Auflage. Würzburg: Curt Kabitsch, 1910. Pp. 56. (Price, 2.50 M.)

Schall, Hermann, und Heisler, August.—Die Praxis der Ernährungstherapie der Zuckerkrankheit. Mit 1 Kurventafel. Würzburg: Curt Kabitsch, 1910. Pp. 150. (Price, 1.90 M.)

Osborne, Thomas B.—The Vegetable Proteins. London, New York, Bombay, and Calcutta: Longmans, Green, & Co., 1909. Pp. xiii-125.

Founders' Week Memorial Volume. Containing an Account of the Two Hundred and Twenty-fifth Anniversary of the Founding of the City of Philadelphia, and Histories of its Principal Scientific Institutions, Medical Colleges,

Hospitals, etc. Edited by Frederick P. Henry, A. M., M. D. Published by the City of Philadelphia, 1909. Pp. xvi-912.

The Johns Hopkins Hospital Reports. Volume XV. Baltimore: The Johns Hopkins Press, 1910. Pp. 542.

Nelson, Bert E.—Introduction to the Analysis of Drugs and Medicines. An Elementary Handbook for the Beginner. First Edition, First Thousand. New York: John Wiley & Sons, 1910. Pp. xii-384. (Price, $3.)

Bäder-Almanach. Mitteilungen der Bäder, Luftkurorte und Heilanstalten in Deutschland, Oesterreich-Ungarn, der Schweiz und den angrenzenden Gebieten für Aerzte und Heilbedürftige. Mit Karte der Bäder, Kurorte und Heilstalten. Elfte Ausgabe, 1910. Berlin: Rudolf Mosse, 1910. Pp. 682.

Peabody, Frederick W.—The Religio-Medical Masquerade. A Complete Exposure of Christian Science. Boston: The Hancock Press, 1910. Pp. 197. (Price, $1.)

Blech, Gustavus M.—Practical Suggestions in Borderland Surgery. For the Use of Students and Practitioners. Philadelphia: Professional Publishing Company, 1910. Pp. 219. (Price, $1.50.)

Dock, Lavinia L.—Hygiene and Morality. A Manual for Nurses and Others, Giving an Outline of the Medical, Social, and Legal Aspects of the Venereal Diseases. New York and London: G. Putnam's Sons, 1910. Pp. v-200. (Price, $1.25.)

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of and deaths from cholera, smallpox, yellow fever, and plague have been reported to the surgeon general of the United States Public Health and Marine Hospital Service for the week ending June 24, 1910:

Place.	Date.	Cases.	Deaths.
Cholera—Insular.			
Philippine Islands—Manila	Apr. 17-23	1	1
Philippine Islands—Bulacan	Apr. 17-23	2	1
Philippine Islands—Pampanga	Apr. 17-23	6	5
Philippine Islands—Pangasinan	Apr. 17-23	21	17
Cholera—Foreign.			
Ceylon—Colombia	Apr. 28	1	
China—Swatow	May 10-16		Present
India—Bombay	May 10-17		1
India—Calcutta	Apr. 24-30		65
India—Rangoon	May 1-7		1
Java—Batavia	May 1-7	7	4
Java—Samarang	Apr. 17-May 7	143	116
Java—Soerabaya	Apr. 17-May 7	68	34
Russia—Ekaterinislav, government	Apr. 17-May 10	97	47
Russia—Alexandrovsk	May 20-26	16	5
Russia—Kharkov, government—			
Kubansk	May 9-19	20	9
Starobelski	May 9-19	4	4
Russia—Kief, government—			
Kief	May 20-26	18	1
Tschigiri district	May 20-26	10	5
Russia—Minsk, government—			
Slutzk district	May 20-26	3	2
Russia—Moscow, government—			
Moscow	May 8-14	1	1
Russia—Poltava, government—			
Krementchug	May 20 26		4
Russia—St. Petersburg, gov't—			
St. Petersburg	May 26	1	
Russia—Tourida, government	May 16-28	14	6
Russia—Vitebsk, government	May 8-14	1	1
Siam—Bangkok	Apr. 24-May 3		127
Straits Settlements—Singapore	Apr. 24-May 7		2
Yellow Fever—Foreign.			
Brazil—Manaos	May 15-21		3
Brazil—Para	May 22-28	13	11
Plague—Foreign.			
Arabia—Aden	Apr. 29-May 4	1	
Arabia—Perim, island	May 4	3	
China—Chaoyang	May 10-16		Present
China—Swatow	May 10-16		Present
Egypt—Alexandria	Apr. 30-May 23	1	3
Egypt—Assiout, province	Apr. 30-May 25	70	37
Egypt—Beni Souef, province	Apr. 30-May 26	10	
Egypt—Fayoum, province	Apr. 24-May 26	65	43
Egypt—Galioobeh, province	Apr. 23-May 20	1	
Egypt—Girgeh, province	Apr. 2-May 26	1	
Egypt—Kena, province	Apr. 30-May 26	93	71
Egypt—Menouf, district	Apr. 30-May 23	13	7
India—Bombay	May 10-17		214
India—Calcutta	Apr. 24-30		66
India—Kurrachee	May 7-14	55	53
India—Rangoon	May 1-7		21
Japan—Kobe	May 15-21	1	1
Mauritius	Jan. 28-Mar. 31	56	30
Smallpox—United States.			
Alabama—Montgomery	June 5-11	2	
California—San Francisco County	Jan. 1-Apr. 30	5	
District of Columbia	June 5-11	1	
Florida—Duval County	June 5-11	5	
Illinois	May 1-31	74	
Kansas	Mar. 1-31	256	
Louisiana—New Orleans	June 5-11	16	
Missouri—St. Louis	June 5-11	1	
Montana	May 1-31	66	
Tennessee—Knoxville	June 5-11	2	
Texas—Cameron County	May 28		Present
Texas—El Paso County, El Paso	Apr. 17-May 31	10	
Texas—Hidalgo County	May 28		Present
Texas—Tarrant County, Ft. Worth	May 1-31	18	1
Virginia—Wise County	Jan. 1-June 16	63	2
Smallpox—Foreign.			
Abyssinia—Adis Ababa	Apr. 23-May 14		Present
Brazil—Para	May 22-28	8	5
Canada—Fernie	June 5-11	2	
Canada—Halifax	June 5-11	4	
Canada—Toronto	May 29-June 4	4	
China—Nanking	Apr. 11-23		Present
China—Shanghai	May 2-15	1	16
Egypt—General	Mar. 4-Apr. 29	540	122
Egypt—Cairo	May 14-20	4	2
France—Paris	May 22-28	6	
Germany—General	May 22-28	3	
Germany—Hamburg	May 22-28	1	
Gibraltar	May 31-June 7	2	
India—Bombay	May 10-17		31
India—Calcutta	May 24-30		3
India—Kurrachee	May 7-14	2	1
India—Rangoon	May 1-7		8
Italy—General	May 23-29	5	
Italy—Naples	May 23-29	3	1
Japan—Kanagawa ken	May 15-21	1	
Japan—Kobe	May 15-21	1	
Malta	May 15-21	4	
Mexico—Aguascalientes	May 29-June 4		2
Mexico—Chihuahua	May 30-June 5	1	
Mexico—Juarez	May 25		1
Mexico—Mexico	May 8-14		1
Mexico—Salina Cruz	Jan. 1-May 9	2	1
Mexico—San Luis Potosi	May 22-28	1	2
Portugal—Lisbon	May 22-28	45	
Russia—Batoum	Apr. 1-30	1	
Russia—Libau	May 23-29	20	2
Russia—Riga	May 22-28	6	
Russia—Moscow	May 7-21	34	8
Spain—Barcelona	Apr. 12-18		4
Spain—Barcelona	May 24-30		1
Spain—Valencia	May 22-28	2	
Straits Settlements—Singapore	Apr. 24-May 7	21	9
Syria—Damascus	May 15-21		Present
Uruguay—Montevideo	Jan. 1-31	132	
Uruguay—Montevideo	Feb. 1-28	99	
Uruguay—San Carlos	May 2		Present

Public Health and Marine Hospital Service:

Official list of changes of stations and duties of commissioned and other officers of the United States Public Health and Marine Hospital Service for the seven days ending June 22, 1910:

COFER, L. E., Assistant Surgeon General. Granted four days' leave of absence from June 22, 1910.

DELGADO, J. M., Acting Assistant Surgeon. Granted twenty-six days' leave of absence from July 1, 1910.

FROST, W. H., Passed Assistant Surgeon. Granted two days' leave of absence en route to station.

GLENNAN, A. H., Assistant Surgeon General. Granted one month's leave of absence from July 11, 1910.

HOUGH, J. SPENCER, Acting Assistant Surgeon. Granted thirty days' leave of absence during the calendar year, 1910.

HUNTER, W. R., Acting Assistant Surgeon. Granted ten days' leave of absence from June 18, 1910.

ILTIS, G. W., Pharmacist. Relieved from duty at Boston, Mass., and directed to proceed to Pittsburgh, Pa., and report to the medical officer in charge for duty.

LONG, J. D., Passed Assistant Surgeon. Relieved from duty in the Hygienic Laboratory and detailed for duty in the Bureau as Assistant Surgeon General in charge of the Division of Domestic (Interstate) Quarantine, effective June 16, 1910, paragraph 12, Service Regulations.

MULLAN, E. H., Passed Assistant Surgeon. Granted thirteen days' leave of absence from June 17, 1910.

O'NEILL, A. A., Acting Assistant Surgeon. Granted three days' leave of absence without pay from June 10, 1910, under paragraph 210, Service Regulations.

Richardson, S. W., Pharmacist. Relieved from duty at the Pensacola Quarantine Station, and directed to proceed to Boston, Mass., and report to the Medical officer in command for duty and assignment to quarters.

Roberts, Norman, Passed Assistant Surgeon. Granted one day's leave of absence from June 13, 1910, under paragraph 191, Service Regulations.

Stiles, C. W., Professor, Chief, Division of Zoology, Hygienic Laboratory. Detailed to attend the annual meeting of the Medical Society of North Carolina, to be held at Wrightsville Beach, June 23, 1910.

Stimson, A. M., Passed Assistant Surgeon. Granted four days' leave of absence from June 15, 1910, under paragraph 191, Service Regulations.

Wertenbaker, C. P., Surgeon. Granted four days' leave of absence from June 27, 1910.

Wille, C. W., Passed Assistant Surgeon. Detailed to attend the joint meeting of the Ohio State Board of Health with local boards of health to be held in Cleveland, Ohio, June 30 to July 1, 1910.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending June 25, 1910:

Banister, William B., Lieutenant Colonel, Medical Corps. In addition to duties at Fort Snelling, Minn., will take charge of the office of chief surgeon, Department of Dakota, St. Paul, Minn., during the absence of Colonel William W. Gray, Medical Corps.

Clark, John A., Captain, Medical Corps. Upon arrival at Seattle, Washington, will proceed to Plattsburg Barracks, New York, for station; granted leave of absence for one month.

Coe, Henry C., Lieutenant, Medical Reserve Corps. Ordered to active service and will proceed to the Camp of Instruction, Gettysburg, Penna., for duty.

Coffey, Albion McD., Lieutenant, Medical Reserve Corps. Granted leave of absence for one month.

Ekwurzel, George M., Major, Medical Corps. Left Fort MacKenzie, Wyo., on ten days' leave of absence.

Ferenbaugh, Thomas L., Lieutenant, Medical Reserve Corps. Reported at Fort D. A. Russell, Wyo., for temporary duty.

Gostin, Bernard S., Lieutenant, Medical Corps. Honorably discharged from the service of the United States.

Gray, William W., Colonel, Medical Corps. Reported for duty as Chief Surgeon, Headquarters Department of Dakota, St. Paul, Minn. Left on June 18, 1910, on thirty days' leave of absence.

Griffis, F. C., Lieutenant, Medical Reserve Corps. Left station with Fourth Field Artillery to Fort D. A. Russell, Wyoming, Target and Manœuvre Reserve.

Hall, William E., Lieutenant, Medical Reserve Corps. Upon arrival at San Francisco, Cal., will proceed to Whipple Barracks, Arizona, for station.

Holmes, R. W., Lieutenant, Medical Reserve Corps. Left Plattsburg Barracks, New York, on ten days' leave.

Hughes, Leonard S., Medical Reserve Corps. Ordered upon expiration of his present leave of absence to proceed to Fort D. A. Russell, Wyo., for station and duty.

Lynch, Edward C., Lieutenant, Medical Reserve Corps. Ordered to active duty in the service of the United States, and will proceed to Fort D. A. Russell, Wyo., for station and duty.

Pinkston, O. W., Captain, Medical Corps. Reported for temporary duty at Fort D. A. Russell, Wyoming.

Pinquard, Joseph, Lieutenant, Medical Reserve Corps. Granted leave of absence from June 22 to September 9, 1910, at which date he is honorably discharged from the service.

Roberts, William M., Major, Medical Corps. Granted three months' leave of absence.

Sharpe, Herbert H., Medical Reserve Corps. Ordered to proceed from Fort Jay to Fort Niagara, New York, for temporary duty.

Snyder, Henry D., Major, Medical Corps. Granted thirty days' leave of absence. Ordered to proceed to New York City, on official business pertaining to the Medical Department of the Army.

Warriner, B. B., Lieutenant, Medical Reserve Corps. Granted ten days' leave of absence.

Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending June 25, 1910:

Asserson, F. A., Surgeon. Detached from the Naval Hospital, Portsmouth, N. H., and ordered to duty at the Naval Hospital, Boston, Mass.

Fitts, H. B., Medical Inspector. Detached from command of the Naval Hospital, Pensacola, Fla., and ordered to continue other duties.

Haynes, J. P., Passed Assistant Surgeon. Detached from the Navy Yard, Norfolk, Va., and ordered to the Naval Recruiting Station, New Orleans, La., and the Naval Station, New Orleans, La.

Heiner, R. G., Passed Assistant Surgeon. Ordered to duty at the Naval Hospital, Norfolk, Va.

Hightower, C. C., Acting Assistant Surgeon. Ordered to duty at the Naval Hospital, New York, N. Y.

Howard, J. V., Acting Assistant Surgeon. Ordered to duty at the Naval Hospital, Philadelphia, Pa.

Jenness, B. F., Passed Assistant Surgeon. Detached from the Naval Recruiting Station, Buffalo, N. Y., and ordered to the Naval Hospital, Portsmouth, N. H.

Pryor, J. C., Surgeon. Ordered to command the Naval Hospital, Pensacola, Fla.

Shipp, E. M., Surgeon. Detached from the Naval Recruiting Station, New York, N. Y., and ordered to the Naval Medical School Hospital, Washington.

Stuart, A., Passed Assistant Surgeon. Ordered to duty at the Naval Hospital, Boston, Mass.

Woodland, E. E., Acting Assistant Surgeon. Appointed an acting assistant surgeon from June 18, 1910.

Births, Marriages, and Deaths.

Married.

Blakeslee—Monroe.—In New York, on Wednesday, June 22d, Dr. Arthur Blakeslee and Miss Helen Catherine Monroe.

Friedel—Okin.—In Stapleton, Staten Island, New York, on Sunday, June 19th, Dr. Herman Friedel and Miss Esther Okin.

Kelley—Brennan.—In Cato, Wisconsin, on Wednesday, June 15th, Dr. John M. Kelley, of Manitowoc, and Miss Sadie Brennan.

Rooney—Livermore.—In Brooklyn, on Tuesday, June 21st, Dr. Alexander J. Rooney and Miss Sophie S. Livermore.

Schneble—Brandenstein.—In Jamaica, New York, on Wednesday, June 15th, Dr. John P. Schneble and Miss Ida Brandenstein.

Died.

Bennett.—In Detroit, on Sunday, June 19th, Dr. John F. Bennett aged forty-five years.

Burrell.—In Canandaigua, New York, on Sunday, June 19th, Dr. Dwight R. Burrell, aged sixty-seven years.

Dorsett.—In Salisbury, North Carolina, on Thursday, June 16th, Dr. E. Rose Dorsett, aged seventy-six years.

Ekwurzel.—In Philadelphia, on Saturday, June 18th, Dr. William Ekwurzel, aged sixty-seven years.

Hark.—In Bethlehem, Pennsylvania, on Saturday, June 18th, Dr. Joseph Hark, aged ninety-two years.

Hawley.—In Baltimore, on Monday, June 13th, Dr. Robert Newton Hawley, aged fifty-four years.

Horton.—In Peekskill, New York, on Tuesday, June 21st, Dr. Stephen F. Horton, aged forty-six years.

Lyon.—In Akron, Ohio, on Friday, June 17th, Dr. O. A. Lyon, aged fifty-five years.

McDonald.—In Rochester, Minnesota, on Wednesday, June 1st, Dr. Donald A. McDonald, of Detroit, aged forty-six years.

Swift.—In Oskaloosa, Kansas, on Friday, June 10th, Dr. Edward D. Swift, of Macy, Indiana, aged thirty-nine years.

Tope.—In Oak Park, Illinois, on Saturday, June 18th, Dr. John Wesley Tope, aged sixty-four years.

Wanstall.—In Baltimore, on Friday, June 24th, Dr. Alfred Wanstall, aged fifty-eight years.

New York Medical Journal

INCORPORATING THE

Philadelphia Medical Journal and The Medical News

A Weekly Review of Medicine, Established 1843.

VOL. XCII. No. 2. NEW YORK, JULY 9, 1910. WHOLE No. 1649.

Original Communications.

DETERMINABLE AND INDETERMINABLE FACTORS IN THE ÆTIOLOGY OF TYPHOID FEVER.*

BY L. L. LUMSDEN, M. D.,
Washington, D. C.,
Passed Assistant Surgeon, U. S. Public Health and Marine Hospital Service.

Typhoid fever is a discovery of modern times, and for that reason the literature of the disease does not contain so many interesting but erroneous views in regard to ætiology as does that of some longer known infectious diseases.

Until the nineteenth century typhoid was confounded with typhus and, no doubt, with other fevers. In 1813 Pierre Bretonneau, of Tours, distinguished "dothién-entérite" as a separate disease. Louis, of Paris, laid the foundation for the differentiation of typhoid from typhus fever. His great work on the subject was published in 1829. Among the students of Louis who applied, in their studies of the prevalent fevers of their different countries, the thorough and systematic methods taught them by their great master was Gerhard, of Philadelphia. To him is due the credit for having first described satisfactorily the clinical and anatomical differences between typhoid and typhus fever. Gerhard's memorable papers were published in 1837 in the *American Journal of the Medical Sciences.* In Great Britain, where the two fevers coexisted, Sir William Jenner exerted a potent influence in having them recognized as distinct.

In the controversies which arose in regard to the differentiation of the two fevers too much emphasis in frequent instances was laid on some of the distinguishing features. One of the most unfortunate results of this was the view, accepted by many of the physicians of the day and widely circulated, that typhoid, in contradistinction to typhus fever, was not contagious. Chomel, writing of typhoid fever in 1834, states that "there is a great difference of opinion among medical men, the majority in France denying every kind of contagion in this disease." Sir William Jenner and Dr. Murchison show by their writings in the decade 1850 to '60 that they believed typhoid to be contagious, but to a very much less extent than typhus. In 1873 the very excellent and convincing work of Dr. William Budd was published, and since then it does not seem that there has been any room for reasonable doubt, in the minds of those thoroughly informed on the subject, that typhoid fever is a contagious disease, that is, one in which the infection is directly communicable from person to person.

The belief that typhoid fever is not "contagious" but "only infectious" has been responsible for the death of thousands. Still, even to-day, this view is sometimes presented by physicians, in some instances because they believe it, in others perhaps only with a view to quieting the fears of a family in which a case of typhoid fever exists.

Murchison, writing of typhoid fever in 1862, states: "It may be communicated by the sick to persons in health, but even then the poison is not like that of smallpox given off from the body in a virulent form, but is developed by the decomposition of the excreta after their discharge." This view seemed to be supported by the observed prevalence of typhoid fever among persons unduly exposed to the contents of cesspools or other collections of sewage or "filth." Murchison in his once popular "pythogenic" theory maintained that typhoid fever "may be generated independently of a previous case by fermentation of fæcal and perhaps other forms of organic matter"; in other words, that the specific infection under certain circumstances could arise spontaneously. Although it seems that the theory of spontaneous generation is now satisfactorily disposed of, yet it still must be conceded as a possibility in spite of experimental evidence to the contrary, that at times the germs of typhoid fever may increase in numbers or in virulence after being discharged from the human body and subjected to the changes of decomposition in collections of fæcal and of other organic matter.

Drinking water offers itself as a ready vehicle for the conveyance to persons of such infection as may exist in sewage. This fact, coupled with the observed occurrence of a number of epidemics of typhoid fever satisfactorily traced to infection in water supplies, has caused a great deal of attention to be given to drinking water as an immediate source of infection and, no doubt, an unfortunate neglect of consideration of the other vehicles concerned. Only within the last twenty years has anything like the attention which they deserve begun to be attracted to the other vehicles, such as "fingers, food, and flies." It is not so very infrequent even now to hear it said by physicians or other persons, who should be better informed, that practically all typhoid fever is caused by water borne infection.

Whipple,[1] after discussing the incompleteness of the data, estimates that not more than forty per cent. of the typhoid fever in the cities of the United States at the present time is due to water.

As careful epidemiological studies of typhoid

*Read before the Buffalo Academy of Medicine, January 11, 1910.

[1]Whipple. *Typhoid Fever.* 1908. Wiley & Sons, p. 132.

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fever in different communities are made more and more importance is being attached to the media of transmission other than water. I do not wish to be misunderstood as saying anything against the advisability of having a pure water supply, because the securing of a pure water supply in a number of instances has been amply demonstrated to have been the most important desideratum in the reduction of typhoid fever; but, judging by the data now obtainable, I should be willing to estimate that not more than twenty-five per cent. of the typhoid fever occurring in the United States during the past twelve months has been caused by infection in public drinking water supplies.

Recent Views as to the Ætiology of Typhoid Fever.

All reliable results obtained by epidemiological studies seem to support the now quite generally accepted view that typhoid fever is a disease which is communicable from person to person and that every case is caused by infection which has come in some way from some previous case. If this view is correct the specific causative agent must be parasitic in nature and dependent for its continued existence upon man as its permanent host. The evidence seems convincing that the causative agent is discharged from the bodies of persons who harbor it, frequently in the fæces and urine, and very rarely in the sputum, and that infection results when this agent discharged from these persons is swallowed by other persons.

Measures to prevent the disease carried out with this view accepted as a working basis have invariably proved successful. Therefore, pending whatever discoveries the future may hold, the acceptance of this view seems to be entirely justified, and any other course entirely unjustified by present knowledge.

Classification of Factors in the Ætiology of Typhoid Fever.

It is difficult to separate sharply the factors in the ætiology of typhoid fever as determinable and indeterminable. Thoroughness of study in given instances affects the determinability of many of the factors. This classification is, therefore, like many others, more convenient than exact; and in using it those factors which may be satisfactorily proved by thorough study to have been operative in individual cases are classed as "determinable."

Accepting the view that every case of typhoid fever is caused by infection coming from some previous case, the determinable and indeterminable factors in the ætiology of the disease may be considered under the following heads: 1. Those concerned in the transmission of the infection from one person to another; 2. those concerned in the establishment of individual susceptibility to the infection; 3. those constituting the specific causative agent.

Factors in the Transmission of the Infection.

When an epidemiologist is called upon to investigate a single case of typhoid fever or a number of cases constituting an outbreak or epidemic, the factors in the transmission of the infection are the ones with which he has to deal, because he can assume (a) that the original source of the infection was the excreta from some person or persons who harbored the germs of the disease and (b) that the persons affected were susceptible to infection. His task is to determine the immediate source or sources of the infection so that proper safeguards may be taken; and, if possible, to trace back the infection through the various channels by which it has come from its original source.

The channels through which the infection may travel are many and devious. Explosive outbreaks occurring in communities usually free from the disease and caused by highly infected water or milk present rather characteristic features, and as a rule epidemiological studies of these will point out quite readily and definitely the immediate source of the infection; but in communities where a high rate of prevalence of typhoid fever is maintained for years and is due to a number of different factors which vary in relative extent of operation from time to time the problem becomes very intricate and its exact solution exceedingly difficult.

Most of the larger American cities present such complex typhoid fever situations. In the large urban community the conditions of life are complex. Large numbers of all classes of people are in close association. Foodstuffs are obtained from many sources and handled by many persons. The milk supply, especially, comes from many sources. In some instances the water supply is obtained from a number of different sources.

When the multiple ways by which the infection can be conveyed from the excreta of one person to the alimentary canals of other persons are considered the difficulty of determining the immediate source of infection in individual cases may be appreciated.

During the past three and a half years, as a member of a board of officers[2] detailed by the surgeon general of the United States Public Health and Marine Hospital Service to study the origin and prevalence of typhoid fever in the District of Columbia, I have been engaged in the study of a complex typhoid fever situation. The results of our studies for 1906, 1907, and 1908 have been published,[3] but some reference to them here may not be inappropriate.

Prior to the autumn of 1905 there was quite a general consensus of opinion among those who had given attention to the subject that Washington's high typhoid fever death rate was due to the polluted water supply obtained from the Potomac river. Engineering projects, therefore, had been directed toward the improvement of the public water supply. Such improvements as had been accomplished by storage basins, however, had not succeeded in satisfactorily reducing the typhoid rate. In October, 1905, a filtration plant was completed at a cost of $3,468,405.00. Since then the city has been supplied continuously with filtered water. In the winter and spring following the operation of the sand filters there was, as had been usual for those seasons, very little typhoid fever in Wash-

[2]Surgeon M. J. Rosenau, Passed Assistant Surgeon Leslie L. Lumsden, and Professor Joseph Hoeing Kastle.

[3]Report No. 1 on the Origin and Prevalence of Typhoid Fever in the District of Columbia. By M. J. Rosenau, L. L. Lumsden, and J. H. Kastle. *Hygienic Laboratory Bulletin* No. 35, 1906. Report No. 2, for 1907, *Hygienic Laboratory Bulletin* No. 44. Report No. 3, for 1908, *Hygienic Laboratory Bulletin* No. 52.

ington; but early in July of 1906 there was a marked increase in the number of cases and throughout the remainder of the year the disease continued to prevail at a rate somewhat in excess, even, of those for the three years previous.

The continued high rate of prevalence of typhoid fever in Washington, despite the improvement of the water supply by slow sand filtration, was a keen disappointment. The problem which confronted us was: Were the sand filters failing to remove the infection from the water or were factors other than water operative in the spread of the greater part of the infection and, if the latter were true, what were these factors, and what was their relative extent of operation?

We have been engaged in the study of this problem since July, 1906. In the investigation we have considered and studied every factor which we have thought could possibly be concerned in the spread of the infection. The investigation has included a study, in field and laboratory, of water, ice, milk, and food supplies generally. Especial attention has been given to persons not apparently ill with the disease and to flies as possible carriers of the infection. A careful epidemiological study has been made of the cases reported to the Health Office during periods of the four years as follows:

July 1 to November 1, 1906,	866 cases
May 1 to November 1, 1907,	675 cases
May 1 to November 1, 1908,	679 cases
January 1, 1909, to January 1, 1910, about	780 cases
Making a grand total of about	3,000 cases

The data regarding the individual cases have been collected each year by the same officer (Lumsden), so that differences in findings for any two of the years may be attributed to differences in conditions, the factors of personal equation not having varied. The investigation of the individual cases has consisted of a visit to the home of the patient, a sanitary inspection of the premises, and an inquiry of the patient himself and of other members of his household as to food and drink used prior to illness, direct and indirect contact with previous cases, and about all other factors thought to have been possibly concerned in the transmission of the infection. The results of our studies in 1906, 1907, and 1908 are published in the *Hygienic Laboratory Bulletins* 35, 44, and 52 respectively and the report of our studies in 1909 is now in the course of preparation. Therefore, I shall refer to our results in 1906, 1907, and 1908 but very briefly and for the purpose principally of bringing out certain points which have a bearing on factors in the transmission of the infection of typhoid fever as a general problem.

Water.—The typhoid fever case rate and death rate in the District of Columbia were lower in 1907 and 1908 than in any previous year of which there is record. The death rate per 100,000 of population in 1906 was 49.3; in 1907, 34.5; and in 1908, 36.5. These represent the death rates for the first three years after the filtration of the public water supply was begun. The average annual typhoid death rate for the three years immediately before the filtration of the water was begun was about 44 per 100,000, and for the three years 1900, 1901 and 1902 about 68 per 100,000. The reduction in the rate for 1907 and 1908 is accounted for by the reduction in the summer typhoid. The rates in the fall, winter, and spring seasons of the three years 1906, 1907, and 1908 were almost exactly the same.

An important question and one difficult to answer is, How much of the reduction in the typhoid fever rate for the summers of 1907 and 1908 was due to the improvement of the water supply as the result of sand filtration? Had such a reduced rate been observed in the summer of 1906, the first summer after the filters were put into operation, there probably would have been few, if any, who would have doubted that the reduction in the summer typhoid had been accomplished by the improvement of the water supply. In 1906, however, the rate equalled or even exceeded the rates of the several previous years, despite the fact that the results of the bacteriological analyses of the water showed that the filtration effected a great reduction in the bacterial content of the applied water, such as was supplied the city during the three years prior to filtration.

Judged by bacteriological standards we found the filtered water supplied the city during the typhoid seasons (July 1 to October 1) of 1907 and 1908 of considerably better quality than the filtered water supplied the city in the season of 1906. The fact that the higher degree of improvement in the filtered water during the summers of 1907 and 1908 was followed by a lowering of the typhoid rate seems to suggest cause and effect.

As a board, we have not been able to decide definitely as to what part water borne infection played in the causation of typhoid fever in 1906; but we have concluded, from the results of our studies, that the Potomac river water previous to filtration caused much less of Washington's typhoid than was generally supposed and that in the typhoid seasons of 1907 and 1908 the filtered water supply played a relatively minor rôle, if any, in the causation of the disease.

The evidence offered by the results of bacteriological examinations alone would seem to justify the conclusion in regard to the part played by the water in the summers of 1907 and 1908. Examination was made practically daily of samples of raw water as it was taken from the river and of the stored and subsequently filtered water as it was delivered to the city. In the three summer months of 1907, for instance, the raw river water averaged about 3,600 bacteria to the cubic centimetre and showed almost invariably the presence of colon bacilli in quantities of 10 and 1 c.c., while after storage and filtration this water averaged only 33 bacteria to the cubic centimetre; and of seventy samples of 10 c.c. each the colon bacillus was found in only one.

Now, if this degree of purification, so far as total bacterial content is concerned, were effected by storage and filtration it appears reasonable to conclude that certainly most, if not all, organisms which have to do with the causation of typhoid fever also would have been removed by the process, provided such organisms do not have some peculiar property which makes them less subject than are bacteria in general to the effects of sedimentation and filtration through sand.

It is interesting to speculate about there being, in certain waters, organisms (some ultramicroscopic

in size perhaps) which, acting either directly or symbiotically with other organisms, have to do with the causation of typhoid fever. The whole field of water bacteriology, particularly in regard to the viability of the causative germs of typhoid fever, offers an extensive and interesting field for further study than has yet been made.

Milk.—The large number of recorded outbreaks of typhoid fever definitely established to have been caused by milk borne infection[4] affords abundant evidence of the great importance of milk as a factor in the transmission of infection. The results of investigations of some of these outbreaks and also the results of experimentation leave no room for reasonable doubt that if the germs of typhoid fever, even in very small numbers, are introduced into milk they will, in frequent instances, undergo rapid and tremendous multiplication and so in some instances may become disseminated through a large volume of milk. Considering the multiple sources of the milk supply of our average large city and the manifold ways by which infection may be introduced into it at the dairy farm or city dairy,[5] it is easy to understand why milk is a frequent immediate source of infection in our cities.

The milk supply of the city of Washington is obtained from about 1,000 farms and is distributed from about seventy-five dairies. Most of the farms are located in Virginia and Maryland, states in which typhoid fever is comparatively highly prevalent. At many of the farms the methods of disposal of sewage and the sanitary conditions generally are far from satisfactory. From time to time cases of typhoid fever develop among persons living on these farms. The health department cannot act until it has learned of the existence of the cases. This information sometimes comes to the health department late, after the occurrence of an outbreak in the city has attracted particular attention to the farm. Some of the dairies of the city are located in the most insanitary surroundings, and at them the methods of handling the milk are obviously faulty. Many of the persons concerned in handling the milk, both on the farms and at the dairies, are careless or ignorant or both, and the education of this class of people to a proper sense of sanitary responsibility would require, at an optimistic estimate, probably at least two or three generations.

In view of these conditions it is not surprising that in each of the four years 1906, 1907, 1908, and 1909 we have had in Washington one or more outbreaks of typhoid fever definitely traceable to milk borne infection. Of all the cases originating in the District of Columbia and which we investigated in 1906, 1907, and 1908 about 10 per cent. occurred in these milk outbreaks.

Besides the cases occurring in the course of the pronounced outbreaks among the customers of certain dairymen we believe the data are sufficient to justify the deduction that there have been a number of scattering cases due to infected milk which we have not been able to trace, and we consider milk to be one of the major factors concerned in the conveyance of typhoid infection to the people of the District of Columbia.

The itinerary of a milk bottle for six months in the average American city would be interesting reading and no doubt would throw considerable light on the part played by milk as a factor, indeterminable by the usual epidemiological methods, in the transmission of infection. In view of present knowledge of the subject there seems to be no excuse for any community to fail to have enacted specific laws prohibiting the use of unsterilized bottles as containers of milk offered for sale to the public.

Personal contact.—Of the cases originating in the District of Columbia and reported to the health officer during the periods (May 1 to November 1) of 1907 and 1908 about 20 per cent. gave a history of more or less direct or indirect association, during the thirty days prior to onset of illness, with previous cases of typhoid fever in the febrile stage of the disease and were attributed to infection by contact.

Considering the amount of association between persons living in a large city and the number of ways in which infection through personal contact may occur, particularly in view of the frequently observed inadequacy of precautions taken for the isolation of patients and the disinfection of their excreta, it is easy to understand that many cases of typhoid fever in such a community may be due to infection by contact which cannot be traced. We regard personal contact as one of the major factors now concerned in the transmission of typhoid fever in the District of Columbia.

In certain cases the determination, by practicable epidemiological methods, of the part played by personal contact as a factor in the transmission of the infection may be more or less accidental. The following observation, which I have recently made, will serve to illustrate:

The Government Hospital for the Insane, with a population of about 3,500, has been for the past five years remarkably free from typhoid fever as compared with other parts of the District of Columbia. The institution's comparative freedom from the disease has been attributed to the use of a pure water supply from artesian wells and of a pasteurized milk supply, and to the generally good sanitary conditions. In 1909 four cases of typhoid fever developed in the institution. Two of the cases, with onsets of illness November 25th and December 2nd respectively, were in insane inmates who had not been outside the institution for over three years; and two, with onsets of illness November 27th and November 30th respectively, were in ward attendants who lived at and took their meals regularly at the institution. The four persons affected had lived, prior to illness, in three separate buildings. The only evidence obtainable which was significant was that they all had their meals prepared in and served from the same kitchen. In this kitchen meals were prepared for about 600 persons in the institution. Otherwise, there appeared to be nothing common to the persons affected that was not common to the rest of the institution's population. Thus attention was attracted to this particular kitchen as being the probable immediate source of the infection. The milk, water, and all foods served from this kitchen came from the same sources as those used in all the

[4] Trask, John W. Milk as a Cause of Epidemics of Typhoid Fever, Scarlet Fever, and Diphtheria. *Hygienic Laboratory Bulletin* No. 56. Milk and Its Relation to the Public Health, 1909, pp. 23-115.

[5] Lumsden, Leslie L. The Milk Supply of Cities in Relation to the Epidemiology of Typhoid Fever. *Hygienic Laboratory Bulletin* No. 56, Milk and Its Relation to the Public Health, 1909, pp. 151-158.

other kitchens. So it appeared probable that the infection in some way was local to this kitchen.

Of those who worked as waiters, cooks, etc., in the kitchen, about ten spent their nights at their homes away from the institution. On being questioned they all denied having been, within two months prior, at any place where any one was sick with fever. The name and location of residence of one, Frank N., a colored man, however, gave a clew; and upon being asked if he did not have a brother by the name of Charles N. who was sick he said he did, but that he had forgotten about him. Charles N. was sick with typhoid fever about a month before the development of the cases in the government hospital. Frank stated, on cross examination, that he had been to see his sick brother only once; but later on it was learned by inquiry at the home of Charles that Frank had been a frequent visitor there.

No other cases have developed in the institution. No other liable source of the infection has been determined. Although the evidence is not absolutely convincing, yet it seems very probable that this man, Frank N., carried the infection on his hands or clothing from the bedside of his sick brother to the kitchen at the institution. Had his brother's case not been recorded previous to the investigation of the outbreak at the institution this man's intentionally misleading statement in regard to association with the sick would have been accepted and he might have gone on spreading infection to others supplied from the kitchen in which he worked.

Take this outbreak as an instance and consider the possibilities in a city of 300,000 population having a hundred or more typhoid fever cases, some not reported, under treatment at private residences and an equal number of chronic typhoid germ carriers entirely unrestricted in the pursuit of their vocations and avocations; and it would seem that if the investigator should be able to determine personal contact as the factor of transmission in one case out of even three, as an average, in which it had operated he would have no cause for discouragement.

Flies and other insects.—There is epidemiological and experimental evidence to support the view that flies and other insects, such as roaches, ants, etc., may at times be factors in the transmission of typhoid infection. But in individual cases the determination of the exact part played by insects to the exclusion of other factors is usually very difficult, if not impossible. Flies and other predatory insects may convey the germs mechanically on their bodies or by feeding on infectious matter and afterward depositing the germs with their excrement. It is possible that in rare instances, epidemiological evidence opposing the view that it is frequently so, suctorial insects, such as bedbugs, fleas, and mosquitoes may convey the infection from the blood of patients to other persons.

Judging by their habits, flies are regarded as the most important of the insects concerned in the conveyance of typhoid infection and they have received the most attention in this connection. In our studies in Washington we have been cautious about attributing cases to fly borne infection, because in instances when conveyance by flies has seemed probable other possible factors could not be satisfactorily excluded. Among the conditions which should be taken into consideration are the abundance of flies and the readiness with which they could have passed from infectious excreta to foods and beverages used by the person affected, and when these conditions are favorable we estimate the chances of the infection having been carried by flies at fifty per cent.

Reasoning on general data, such as the lack of unusual prevalence of typhoid among persons most exposed to flies, and to the lack of correlation between the seasonal curve of fly abundance and that of typhoid fever prevalence, we have concluded that, though flies perhaps are not an insignificant factor, yet they are not a major factor in the transmission of typhoid infection in Washington.

Mice, rats, cats, dogs, etc.—Any animal which comes into contact with infectious material and afterward with foods, beverages, or the hands of persons, may be a factor in the transmission of infection, but one which obviously would not usually be susceptible of exact determination.

Raw shellfish, fruits, and vegetables.—The complex conditions under which these foodstuffs are marketed in large cities make their exact determination as factors in transmission difficult. Here, again, however, general data obtained by epidemiological studies of cases are helpful. If in a community where only about fifteen per cent. of the population habitually eat raw oysters, for instance, it is found that seventy or eighty per cent. of the cases of typhoid fever occurring are in persons who have habitually eaten raw oysters, suspicion should fall upon the oysters and a searching investigation be undertaken.

Other information which would be helpful in such an instance would be the determination if there had been any unusual occurrence of cases among persons who had nothing else particularly common to them excepting the eating of oysters from the same source.

When the number of factors in the transmission of the infection are considered there is no cause to wonder why we have typhoid fever, but there is cause to wonder why we have so little.

Factors Concerned in the Establishment of Individual Susceptibility to the Infection.

We have no idea why, in certain instances of fifty or more persons apparently equally exposed to the infection, only one or two will have the disease. There is fairly convincing epidemiological evidence in support of the view that not every person who ingests typhoid fever germs—in small numbers, at least—has the disease. At homes of typhoid fever patients we observe frequent instances of grossest carelessness in the handling of the patient's dejecta and all the known conditions apparently very favorable for the spread of the infection and yet no secondary cases develop in the home or even in the neighborhood. On the other hand, we observe instances of mechanical cleanliness, at least, in the care of the patient and all the known conditions apparently much less favorable for the spread of the infection than in the first instances, and yet several secondary cases develop.

Such occurrences, of course, may be explained by differences in operation of some determinable or indeterminable factors in the transmission of the infection; but this explanation does not hold in out-

breaks clearly due to highly infected water or milk and in which about ten per cent. of the population is affected. In these outbreaks it does not appear reasonable to conclude that the ninety per cent. of the persons using such water or milk escape because all of them have failed to ingest the germs. In this connection the following observation made in Washington is apt:

In the course of a milk outbreak in the fall of 1906 among the customers of a certain dairyman seven cases occurred among the inmates of a home for children. The cases developed within a period of two or three days. Their development was synchronous with that of cases among persons in other parts of the city supplied with milk by the same dairyman. There were in the children's home about 100 inmates. The way in which the milk was delivered to and served at the institution made it practically impossible for the seven children affected to have drunk milk from any one can or one day's delivery, from which at least seventy-five per cent. of the children did not drink. It is possible that the germs were either clumped or in a high state of dilution in the milk and that only the seven children affected received any of the germs; but it seems more reasonable to believe that some of the other children did ingest the germs and that they escaped the disease because of their lack of susceptibility to infection at that time.

The factors concerned in the establishment of susceptibility to typhoid infection in individual cases are at the present time entirely undetermined. In our investigations in Washington we have considered the general health of the individual as a factor and we have found that typhoid fever does not prevail to a much if any greater extent among persons in poor or "run down" health than it does among those giving a history of apparently excellent general health prior to development of typhoidal symptoms.

Here again, however, the difference in operation of factors of transmission cannot be excluded, because persons in good health, by their greater activities, perhaps, may be more exposed than persons in poor health; but the bulk of evidence suggests that the factors of susceptibility are more specific than those of general health tone.

We may indulge in interesting speculation as to the chances of typhoid germs surviving, multiplying, and causing infection after being ingested and subjected to the very different conditions of flora, fauna, and juices of different alimentary canals. Such speculation is well, provided it leads to scientific investigation. In the bacteriology and protozoology of the intestinal tract of man and lower animals there is a large and difficult, but very promising, field for exhaustive scientific research. A most excellent foundation for the study of the bacteriology of the intestinal tract of man has been laid by the work of Ford.[6] Susceptibility to typhoid infection may be entirely a matter of symbiosis between the typhoid germ and some other one organism or some group of organisms. In other words, it may be a specific and easily remediable condition and its determination might have an important practical bearing on measures to prevent the disease.

[6]Ford, William W. The Classification and Distribution of the Intestinal Bacteria in Man. *Studies from Rockefeller Institute for Medical Research*, ii, 1904.

Factors Constituting the Specific Causative Agent.

In 1880 Eberth[7] and later in the same year Koch,[8] working independently, discovered in the spleen and diseased areas of the intestines of typhoid cadavers an organism which has been designated the typhoid bacillus. Not until the researches of Gaffkey[9] in 1884, however, was the bacillus obtained in pure culture and its principal biological features described. Since then the evidence has been accumulating and though perhaps not yet absolutely convincing still is very strong that this Eberth-Koch-Gaffkey bacillus, or "typhoid fever," is an essential part, if not the whole, of the agent constituting the specific cause of typhoid fever. Some of the points in the evidence which seems to support the now quite generally accepted view that the typhoid bacillus is the specific cause of typhoid fever are as follows:

1. The constant association of the bacillus with the disease. The bacillus can be obtained by culture from the circulating blood of practically every case. It is found in the blood in the *earliest* stages of the disease. By recently improved technique cultures will show the presence of the organism in the blood of over ninety per cent. of cases in the first week after onset of definite symptoms.[10] As the symptoms abate the bacilli disappear from the blood. The bacilli are discharged from the bodies of typhoid fever patients, being subject to demonstration at some time during the attack in most cases in either the stools or urine, or in both, and in occasional cases in the sputum. In typhoid cadavers the bacilli are constantly present in the intestines, spleen, or other organs. In the tissues most affected typhoid bacilli are found either in pure culture or in marked predominance over whatever other organism or organisms are demonstrable.

2. No organism other than the typhoid bacillus has been found to be frequently associated with the disease in what could reasonably be construed as a possible causal relationship, although quite extensive investigations have been made with such a possibility in view.

3. The bacillus is not found in healthy persons except in those who either have had the disease or have been exposed to typhoid infection. The fact that the bacilli are sometimes harbored by and discharged in the excreta of persons who do not have and have not had symptoms of the disease appears to be no more reason for doubting that typhoid bacilli are the cause of typhoid fever than for doubting that diphtheria bacilli are the cause of diphtheria, because these organisms are sometimes found in the throats of persons who do not have symptoms of diphtheria.

4. It has been quite conclusively proved in a number of instances that persons who are typhoid bacillus carriers are capable of conveying typhoid

[7]Eberth. *Archiv für pathologische Anatomie*, lxxxiii, p. 486, 1881.
[8]Koch. *Mittheilungen aus dem kaiserlichen Gesundheitsamte*, i.
[9]Gaffkey. *Mittheilungen aus dem kaiserlichen Gesundheitsamte*, ii, 1884, p. 372.
[10]Kayser, Heinrich. *Münchener medizinische Wochenschrift*, p. 823, 1906.

infection to other persons. This seems to be one of the most significant points in the evidence that typhoid bacilli have a specific causal relationship to typhoid fever. It hardly seems reasonable to believe that years after the attack of fever an infectious person would be carrying and discharging in the excreta immense numbers of typhoid bacilli along with other organisms constituting the actual causative agent, unless there is between such organisms and typhoid bacilli some relation of symbiosis or commensalism which has no known analogy in nature.

5. The blood serum of typhoid fever patients gives a specific reaction with pure cultures of typhoid bacilli. This strongly suggests that the blood serum of typhoid fever patients contains products which have resulted from a reaction between the body cells or juices (the disease process) and the invading typhoid bacilli.

6. The biological features of the typhoid bacillus correspond exactly with those of the infective agent; that is, so far as the biological features of the latter have been determined by the results of epidemiological studies. There is no evidence that any host other than man is necessary for the perpetuation of the agent of typhoid infection. Therein it differs from a large class of protozoal and other animal parasites.

The agent is apparently infective immediately after being discharged from the bodies of persons sick with the disease. It will live a variable time after being discharged from its host, the time being affected by a number of conditions which have been proved by experimentation to affect similarly the viability of typhoid bacilli. There is abundant evidence that water may convey it directly and in a virulent condition from the alvine discharges of typhoid patients to the alimentary canals of healthy persons. The evidence seems conclusive that it certainly may be conveyed by milk and, at times, almost certainly undergo multiplication or concentration in milk; in the latter respect differing from all known zooparasites which cause disease in man, but corresponding with bacteria of the typhoid bacillus group.

7. The treatment of excreta from typhoid fever patients in a way which will destroy typhoid bacilli, apparently will invariably render such excreta free from infection.

8. Vaccination of persons with pure cultures of typhoid bacilli, besides causing the appearance in the blood of agglutinins, bactericidins, bacteriolysins, opsonins, and stimulins specific for heterologous strains of the typhoid bacillus, apparently confers upon such persons a high degree of immunity against natural typhoid infection.[11]

9. The lower animals do not have typical typhoid fever either naturally, so far as known, or as the result of being fed or inoculated with typhoid bacilli. Grünbaum[12] reports, however, that he has succeeded in several instances in producing in chimpanzees—lower animals approaching man in type—fairly characteristic symptoms and decidedly characteristic anatomical lesions of typhoid fever by feeding them pure cultures of typhoid bacilli.

10. The results of a number of laboratory accidents suggest that typhoid fever may be caused in persons by the swallowing of typhoid bacilli. Duflocq and Voisin[13] report an interesting case of a woman who had quite a typical attack of typhoid fever after swallowing, with suicidal intent, a large dose—two tubes—of pure culture of typhoid bacilli. Natural infection in this case could not be positively excluded, but the time of onset of the disease and the time of taking the culture suggest more than coincidence.

This array of evidence seems quite convincing that the typhoid bacillus is an essential, if not the exclusive, factor in the causation of typhoid fever. From time to time, however, certain facts are determined which give rise to some apparently justified skepticism about the typhoid bacillus being the prime factor in the causation of typhoid fever.

Of particular interest in this connection are the results of the work on the ætiology of hog cholera[14] by De Schweinitz, Dorset, Bolton, and McBryde. This disease in the hog has been considered to be somewhat analogous to typhoid fever in man. In 1885 Salmon and Smith[15] discovered in the bodies of hogs dead of hog cholera a bacillus which was designated *Bacillus cholerœ suis,* or the hog cholera bacillus. These investigators found that the bacillus was present in most cases of the naturally acquired disease and also that it could be recovered from cases of the disease produced by inoculation with cultures. A disease with the characteristic symptoms and anatomical lesions of hog cholera could be produced in hogs almost invariably by intravenous inoculation and very frequently by feeding with pure cultures of the bacillus. These observations were confirmed by the findings of a number of independent investigators and the bacillus was quite generally accepted as the cause of hog cholera.

Certain points apparently at variance with this view, however, were developed by further study of the subject in the Bureau of Animal Industry. Thus, there were some outbreaks in which the bacillus either could not be obtained or only with great difficulty; animals recovered from the effects of inoculation with cultures of the bacillus, though having a considerable immunity against subsequent similar inoculation, had no immunity against the natural disease, while an attack of the disease acquired naturally undoubtedly gave immunity against a subsequent attack; large doses of cultures of the bacillus were required to produce fatal disease when inoculated subcutaneously, while very small quantities of blood from a diseased hog given the same way would produce fatal disease; the use on exposed hogs of an antitoxic serum, produced by treating an animal with cultures of the bacillus, would seem to give in some outbreaks considerable protection while in other outbreaks it would seem to afford no protection whatever.

[11] Stone, Willard J. Typhoid Immunity and Antityphoid Inoculation. *Journal of the American Medical Association,* liii, p. 1253, 1909.

[12] Grünbaum. *British Medical Journal,* i, p. 817, 1904.

[13] Duflocq and Voisin. *Archives générales de médecine,* ii, p. 2197, 1903.

[14] Dorset, Bolton, and McBryde. The Ætiology of Hog Cholera. *Bureau of Animal Industry Bulletin* No. 72, 1905.

[15] Salmon and Smith. *Centralblatt für Bakteriologie,* ix, p. 253, 1891.

These observations led to extensive work on the subject and in 1905 Dorset, Bolton, and McBryde published the results of their very interesting investigations. Some of these results went to show, 1, that there is in the blood of hogs suffering from hog cholera a virus which is filterable through the finest porcelain filters (such as will effectually prevent the passage of cultivated hog cholera bacilli) and which, when inoculated in small quantities, subcutaneously or intravenously, into healthy hogs, will produce a disease having all the features of naturally acquired hog cholera; 2, that in hogs fed or injected intravenously with cultures of the hog cholera bacillus a disease will develop, in frequent instances particularly when receiving fairly large doses, which has the clinical and anatomical features of hog cholera, but which almost always, if not always, lacks the feature of contagiousness which appears to be constant in the naturally acquired disease. The authors state, among their general conclusions: "While our experiments establish beyond question that the filterable virus was present in all the outbreaks of hog cholera studied experimentally by us, it is also true that *Bacillus choleræ suis* was present almost as uniformly. So it would be impossible to overlook, even if we were inclined to do so, the part which this organism may have played. But from the results of our inoculations with the filterable virus, on the one hand, and our results and those of others with cultures, on the other, we are compelled to conclude that the prime cause in our cases was the filterable virus, and that *Bacillus choleræ suis* was at most an accessory factor."

The results on the studies of the ætiology of hog cholera have suggested the possibility of there being in typhoid fever some agent other than the typhoid bacillus, which is the prime factor in the ætiology of this disease. Certain points of difference between the two diseases, however, should be noted. In some outbreaks of hog cholera *Bacillus choleræ suis* cannot be found,[16] while in all outbreaks of typhoid fever *Bacillus typhosus* can be found without difficulty.

The fact that *Bacillus choleræ suis* is found in the majority of hogs in which hog cholera has been produced by inoculation with filtered bacillus-free virus proves beyond reasonable doubt that this organism frequently inhabits the bodies of normal hogs, and Grabert[17] reports the finding of the bacillus in the intestinal canals of seven out of twenty-three healthy hogs which had not been exposed to known hog cholera infection, while *Bacillus typhosus* is never, or if ever certainly very rarely, found in the intestinal canals of normal persons who have not been exposed to typhoid infection.

The blood serum of hogs suffering from hog cholera does not have, in the vast majority of cases, markedly increased specific agglutinating properties for *Bacillus choleræ suis*,[18] while the blood serum of typhoid fever patients does have, in the vast majority of cases, markedly increased specific agglutinating properties for *Bacillus typhosus*.

In many cases of hog cholera *Bacillus choleræ suis* is not found in the circulating blood during life or in the organs after death, while in typhoid fever *Bacillus typhosus* is found in the circulating blood during life, in most cases in the earliest stages of the disease, and in practically all cases in the organs after death.

These points of difference appear to be significant and to suggest that in hog cholera *Bacillus choleræ suis* is a secondary invader and that in typhoid fever *Bacillus typhosus* is a primary invader.

Recent developments in the study of heterologous and of group agglutinins may be taken as ground for argument that the specific agglutinating property of the blood of typhoid fever patients does not necessarily signify that this property has resulted from infection with the typhoid bacillus. Wilson and Symmers[19] report that seven out of twenty-one samples of serum from cerebrospinal fever patients which they examined in dilutions of 1 to 50, or higher, agglutinated *Bacillus typhosus*.

An organism isolated from Belfast tap water and which, so far as could be determined, bore no ætiologic relation to cerebrospinal fever was found to agglutinate in 153 out of 184 different samples of serum, in dilutions of 1 to 50, or higher, taken from cerebrospinal fever cases.

Wilson further reports that of thirty-one samples of blood serum taken from Belfast cases of typhus fever eighteen, in dilutions of 1 to 50, agglutinated typhoid bacilli.

Varieties of *Bacillus proteus* have been found which agglutinate with greater readiness than do stock cultures of *Bacillus typhosus* in the serum of typhoid fever patients.[20]

Another point in the evidence against the typhoid bacillus being the exclusive factor in the causation of typhoid fever is the escape from the disease of many persons who almost certainly have ingested typhoid bacilli in small numbers. That the operation of some factor, plus the typhoid bacillus, is ordinarily necessary for the disease to result is suggested by the following:

(a) Seasonal prevalence.—In most communities in the north temperate zone a distinctly increased rate of prevalence of typhoid fever occurs during the summer and early fall months. It does not seem that this seasonal prevalence can be accounted for wholly by increased operation in the known factors of transmission of the infection. The experimental evidence is quite convincing that under known conditions the viability of typhoid bacilli outside the human body is less, or certainly no greater, at this season than at others. If seasonal prevalence is not due wholly to changes in conditions which affect the infective agent (seed) then it must be due in part to changes in conditions which affect the host (soil).

(b) Frequent instances of apparent noninfectivity of typhoid bacillus carriers.—A number of bacillus carriers have been discovered who, though for years perhaps have been discharging in their excreta, particularly the urine, tremendous numbers of typhoid bacilli, have not caused the disease among those with whom they have been most

[16] McClintock, Boxmeyer, and Siffer. Studies on Hog Cholera. *Journal of Infectious Diseases*, ii, p. 351, 1905.
[17] Grabert. *Zeitschrift für Infektionskrankheiten*, iii.
[18] McClintock, Boxmeyer, and Siffer. *Journal of Infectious Diseases*, ii, p. 351, 1905.
[19] Wilson, James W. On Heterologous Agglutinins, More Particularly Those Present in the Blood Serum of Cerebrospinal Fever and Typhus Fever Cases. *Journal of Hygiene*, ix, No. 3, p. 316, 1909.
[20] Frost, W. H. Note on an Organism Isolated from Washington Tap Water, Agglutinated Readily by the Serum of Typhoid Fever Patients. Read before the Laboratory Section, American Public Health Association, Richmond, Va., October, 1909.

closely associated, even when the circumstances have been such that it is almost inconceivable that some of the bacilli in their excreta would not have been conveyed at times to the alimentary canals of their close associates. In this connection, variation in infectivity of different strains of typhoid bacilli has to be considered.

Davies and Hall[21] report an instance of a bacillus carrier who, in the course of three years, apparently caused three outbreaks of typhoid fever, and then herself had an attack of fever which the authors considered clinical typhoid.

CONCLUSIONS.

From the foregoing consideration of the determinable and indeterminable factors in the ætiology of typhoid fever, the following conclusions appear to me to be justified:

1. That typhoid fever is a disease which is communicable from person to person; that the infective agent is effective immediately upon being discharged from the bodies of diseased persons and that anything which will serve to convey living organisms having the biological features of bacteria of the so called typhoid bacillus group from the excreta of such diseased persons to the alimentary canals of healthy persons may be a factor in the transmission of the infection; that the most common and, therefore, the most important factors in transmission are personal contact, water, milk, raw fruits and vegetables, raw shellfish, flies, and other insects; that if there be any as yet unknown factors in the transmission of the infection, their operation is prevented by the same measures which will prevent the operation of the known factors.

2. That the factors concerned in the establishment of individual susceptibility to invasion by the infective agent are so far undetermined. That there is some specific factor so concerned is possible, but that the evidence in favor of such a view is little if any stronger than the evidence that there are specific factors similarly operative in the causation of tuberculosis, diphtheria, lobar pneumonia, and other diseases generally regarded as resulting from bacterial invasion.

3. That the bulk of evidence supports the view that the Eberth-Koch-Gaffkey bacillus or "typhoid bacillus" is an essential, if not the exclusive, factor in the production of typhoid fever; and that in the adoption of practical measures to prevent the disease this organism may be, and at present should be, regarded as the specific infective agent in the causation of typhoid fever.

FRANCOIS RABELAIS, M. D., REFORMER AND BUFFOON.

By W. B. Konkle, M. D.,
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The buffoon saved the reformer, and the reformer immortalized the buffoon—is not that the core and key of the Rabelais riddle? At any rate, thus will we take our chance at the enigma of this Theban sphinx that for well nigh unto four centuries has kept her rock by the highway of literature; while never comes the Œdipus at whose full answer she would cast herself down. But our interpretation is not new—it has been tried and retried; so that we have no hope of proving an Œdipus. Rather will our effort aim to be, more than anything else, a doctor's tribute to one of the world's greatest names, which at the same time essentially and peculiarly belongs to medicine.

And what a war has been waged around our Rabelais—marvelous Rabelais! And how to some has he been "a stone of stumbling and a rock of offense," while to others "a chief corner stone" in the temple of *la renaissance* of thought and progress! Few have taken middle ground in the contention about this mysterious monk. Disputants have generally seen in him either a Lucifer fallen from Heaven, or a Diabolos risen out of the smoke of the pit. So the question has been largely one of extremes—of good Lord or good devil. And whichever camp you choose you find yourself in right valiant and noble company.

But let us get into the saddle in defence of our thesis. And first it may be submitted that there are certain phases of Rabelais's makeup which are rather clear—which will scarcely be gainsaid. The evidence as to this is in minor part external and circumstantial; but mostly and mainly it is internal to the writings concerned. Such evidence establishes conclusively several elements of strength and greatness as belonging to Rabelais. His erudition stands out saliently, looms up massively; it overawes the contemplator. In research without the aid of indexed libraries and trained helpers, his studies compassed all literature. Master of the principal modern languages, and, likewise, proficient in Latin, Greek, Hebrew, and Arabic, in his reading he went directly to fountain heads. Scholars of his day and acquaintance freely deferred to his superiority. Tiraqueau pronounced him "a man most learned in all kinds of scholarship above his age." Pierre Amy, his associate at la Basmette, distinguishes him as "the most erudite of the Franciscan brothers." In fact at an epoch luminous with learning he was prodigiously learned. His erudition was even fuller and more universal than was, two centuries later, that of Voltaire.

As in all other domains, so in the special field of medicine was Rabelais's information deep and wide. Medical science was then, forsooth, yet very crude. Oh! *how* crude it was! "Tell it not in Gath, publish it not in the streets of Askelon; lest the daughters of the Philistines rejoice, lest the daughters of the uncircumcised triumph." But the longer one studies the state of medicine at some of these earlier periods comparatively with the various satires of the same, the more is one impressed that the satires are likenesses rather than caricatures. Grossly and uncouthly, of course, yet, withal, truly and justly is sixteenth century medicine painted on the pages of Rabelais. From the summit of exhaustive knowledge of the subject this all discerning mind detected the defects in medical thought and art, and sketched them. And it is a glory to our profession that in criticism of matters medical Rabelais, doctor of medicine, was by a number of decades a forerunner of Molière.

The feats of the world genius have so eclipsed

[21] Davies and Hall. *Lancet*, November 28, 1908, p. 1585.

the attainments and abilities of the physician, that medical writers have to a considerable extent overlooked Rabelais—have quite commonly missed his claims to their recognition and praise. This fact will warrant some digression from our main theme for the purpose of bringing into relative prominence that side of him by which he is joined to us.

Rabelais was a monk under pressure, and a physician by choice. He had evidently perused the medical classics before his matriculation at Montpellier, since immediately upon his entrance to that famous school he participated in scholarly discussion. At Montpellier and afterward he was distinguished as a medical teacher, writer, and practitioner. In 1543 at the great hospital of Lyons, to which he was physician, he gave a public course in anatomy upon the *cadaver*, thus anticipating the career of Vesalius. The invention and improvement of surgical instruments received from him some attention.

He was physician through and through. Harnack says St. Luke reveals himself as a physician by the style, phraseology, and color of his writings. By the same tokens Rabelais, the physician, may be known. You see and hear and taste and smell and *feel* medicine page after page, and chapter after chapter throughout his monumental work.

Two brief passages may give an idea of the substance and flavor of our author. How wise, how scientific, how modern is this!—"Good doctors employ at the proper time such methods in the prevention of disease and in the preservation of health that they have small need of the therapeutic and curative agency of medicaments." How human the interest, how shrewd the humor in this!—The vital and eternal question of fee is up between a patient, Panurge, and a doctor, Rondibilis. Remarks the doctor, "From bad people I never take anything. I never refuse anything from good people. I am entirely at your command." Says Panurge, "If I pay." Replies Rondibilis, "That is understood."

As elsewhere, so in the medical sphere Rabelais maintained an attitude of caution, of vigilance, of independence; and the example and lesson of this attitude constitute, perhaps, his greatest contribution to medicine. Such example and such lesson were the things medicine most needed. Nowadays doctors are "Thomases," who must thrust their own fingers into the wound ere they will believe. Elerslie Wallace was wont to say again and again to his class, "Don't believe anything you hear, and only half you see." Once in narrating an experience he exclaimed, "I saw it; but I don't believe it." But it has not always been so. Back along the track of the years doctors have been credulous, superstitious, servile. Rabelais taught them to be open minded, but not pliant minded; to respect and cultivate the past, but not to worship it or wear its chains.

Getting back to Rabelais the man, it may be next noted that he was great as a thinker. His scholarship gave to his view the range of the world and of the ages. He was free and honest. And freedom and honesty of thought go hand in hand with self trust, self poise, self peace, self respect. Rabelais was deeper than Luther and broader than Calvin. He was purely and coldly intellectual. Fanaticism, mysticism, ecstasy, these were no part of him. He was not of the St. Theresa, Luther, Wesley type. Luther and Calvin and their class broke down old barriers, it is true; but they set up others, rigid and absolute. Rabelais wore no yoke, and imposed none; he was a breaker of fetters, but no forger of fetters.

And he was not credulous—could not be humbugged. Indicative of this trait is the following fine piece of his irony—"A good man, a man of good sense, always believes what people tell him, and, above all, what is written. Solomon and St. Paul say so." Nor was he superstitious. At a time when astrology was held in higher honor than astronomy, when the heavenly bodies were studied as oracles and tracers of destiny, rather than as masses of matter and pieces of the universe, our unmonkish monk was writing this: "Holding, then, for certain that the stars care as little about kings as about beggars, about the rich as about rascals, I shall leave it to other prognosticating fools to speak of the kings and the rich, and I shall speak of people of good condition." Nor, yet, was Rabelais the passive puppet of authority. He sounded a clarion note of progress in this passage: "Your philosophers are wrong to complain that all things have been described by the ancients; and that they have left to their latter day successors nothing new to invent."

But the acme and crown of Rabelais's greatness as a thinker is his consistent attitude of sane, reasonable, dignified scepticism toward every field and phase of thought. Euripides makes the messenger in his *Helen* say: "Nothing is more useful to mortals than a wise distrust." And our Shakespeare has Hector saying in *Troilus and Cressida:* "Modest doubt is called the beacon of the wise." Philosophy and theology have betimes gone to such extremes with their reveries and vagaries, have asked humanity to believe so much and so variously and so contradictorily, that little wonder is it that the human mind has anon set up for itself some sort of stockade behind which it could take refuge, and find itself inclosed. Pyrrhonism is the disdainful, defiant protest of sober souls against frenzied speculation. The spirit of the stand finds completest expression in Montaigne's *"Que sçai-je?"* And of it were born the positivism of Comte and the agnosticism of Huxley. As for the skepticism of Rabelais it stops far short of nihilism and negation. It affirms and exercises only what Michelet designates *"le droit d'examen";* that right of the individual mind at once natural and inalienable. Rabelais would say with St. Paul, "Prove all things; hold fast that which is good."

As a writer, too, was Rabelais great. He is a bold, rugged original. He is unique, distinct—no one is like him. In the world of literature he is the creator of *un nouveau genre.* His nearest reproduction is Dean Swift, whom Voltaire characterizes as "Rabelais in his senses"; but between the Frenchman and the Briton there are wide and deep contrasts. Rabelais called a halt on the un-Frenching of French. He did for his native tongue what Bunyan did for English; he fixed in their purity its basal forms and idioms. He is the maker of a universal classic.

Again, Rabelais was great as measured by his associations and friendships. He moved in the most

refined and cultured circles. His associates and friends were the ablest and most learned men of his day. He was intimately joined to Dolet, the martyr. He encountered Calvin, but soon separated himself from him on account of his intolerance as a sectarian. He was honored and protected by the most enlightened and influential dignitaries. Most true is it that a man may be known by the company he chooses. Just as true is it that a man may be known by the company that chooses him.

And Rabelais was great in his ideals. The size of a man is shown by the size of his gods. Little, sordid souls bow down at mean altars. Not at the shrines of wealth and power and fame and ease did Rabelais worship; but at those of truth and liberty and justice and knowledge and fraternity. Demons and demigods were not on his calendar. His divinities were throned in the empyrean.

Finally, Rabelais was great in what he undertook and in what he accomplished. One can fancy him saying to his needy, yearning, imploring world, "Silver and gold have I none; but such as I have give I thee." He gave his best—the influence of an intellect rare in strength and training as against wrong and as for right. The term "influence" is used advisedly. It represents Rabelais's method; a method probably adopted deliberately. No wise man will try to forcibly guide or to drive the world. Rabelais was an exponent of moderation and tolerance; these he both preached and practised. He was an enlightener and monitor of the human mind; not a dogmatist and despot. He was a real reformer, as every scholar and thinker should be. But he was cosmopolitan in his survey and grasp of conditions and questions. He was intense and incisive, but liberal and generous. He smote error, but respected conscience. He struck straight and hard, but not maliciously or malignantly. While to portray him as a merry-andrew is likely a defamation, yet we can conceive of Rabelais as a true son of Democritus, the laughing philosopher. He might well have been a patron of *le feu de joie;* but by him could have been lighted no *auto da fé.*

Rabelais delivered a telling blow at so called vested rights of ecclesiastical and civil power. Human rights are eternal, immutable, God given. A wrong can never be a right. The asserted rights of spiritual and temporal empire are often mere customs sacred in direct ratio with their age. Or they are prerogatives rather; and prerogatives usually have begun in arrogation. Against usurped dignities, antiquated ideas, ancient prejudices, absurd beliefs Rabelais leveled his lance in combat without compromise and without quarter. And the roots of much after betterment as to these things may be traced to him.

From the rock of his greatness thus defined let us direct our defense of Rabelais against the imputation of grossness, of impurity, of bestiality. The charge cannot be evaded or ignored. There is that rotten, reeking mass of coarseness and vileness. It must be accounted for. It must be clearly and adequately explained; or our idol will take the form of a monster with upper parts godlike, and with lower parts like a scaly dragon. Mere apology will not fit, and cannot avail. It must be shown that the vulgarity and obscenity in his book do not appertain to, and flow from, Rabelais's self, and that they have a profound meaning and a wholesome purpose, or both book and author must be relegated to the cleansing fires of purgatory. The situation presents a single alternative, and involves a single task.

To get the problem into its proper bearings and atmosphere let us glance at Western Europe of the sixteenth century. Vast forces were clashing. New, strange figures moved on the social stage. The scene was one of *Sturm und Drang.* There and then "were all the fountains of the great deep broken up." "There were giants in the earth in those days." There were the newly ascendant Olympians of the reformation in desperate, relentless, irrepressible conflict with the Titans of the old order of things. There were mighty monarchs and mighty hierarchs; mighty metaphysicians and mighty physicists; mighty thinkers and mighty doers. But European morals of the age were extremely loose. Licentiousness was rampant. The shames that now survive only as exceptions and in the darkest corners of society were then practised barefacedly and above board. Unutterable things were occurring as common events; and nobody was shocked. In many instances nunneries were brothels; and monasteries were something worse. The then moral corruption has a correct and significant index in the history of syphilis during the period. That disease, which the Italians called French, and the French called Italian, and the Turks called Christian, had attained the proportions of a plague throughout Christendom. What that means can be estimated by those who pause to consider the chief factor in the propagation of the malady. Europe was one vast syphilitic ulcer. The pox had even its poet. It killed Francis I. It formed at least one bond betwen Ulrich von Hutten, Erasmus, and Leo X. A keen *saillie* of Rabelais, himself, is here in point. It runs thus: "Hold for sure that those who have not had the pox in this world have it in the other."

Oh! this lewd, lewd age! But dark as is the picture of it, we, yet, may discern in it some light. Morals were really on the upgrade—had improved as compared with prior conditions. Sexual passion had at least been brought back largely from perversion to within the scope of normality. Sexual indulgence had in general resubjected itself to the limitations of natural vice. We use the designation "natural vice" differentially. But the phrase conveys a twinge of regret and pain. We like to persuade ourselves that what is natural is *not* vice.

And the prevalent corruption crept into literature, and tainted it. Much of such writing was current. Most of it perished; perished from its very unsoundness; nastiness preserves nothing. A few pieces of it survived, in spite of their vileness, through intrinsic merit of some sort. Marot was foul. The *Heptameron* of Marguerite d'Angoulême makes quite a fit companion volume for Boccaccio's *Decameron.* As much as a century later the *Contes* of La Fontaine cannot be put upon the same shelf with his *Fables.*

So in the morals and manners of his day we find at least license and excuse for the filth in Rabelais. And this is important; because without this no other consideration could warrant its presence. But be-

sides license and excuse for it, its justification and vindication are, also, necessary. We have here another case where "Cæsar's wife must be above suspicion."

The argument *a priori* is certainly favorable to Rabelais. Is it at all probable that a man like him, a man of indisputable greatness along essential lines of character, would deal out such heaps of ordure for its own sake? Naturally and spontaneously from a source like this will not gush side by side a limpid, life-giving stream, and a murky, polluted torrent. But Rabelais's book represents either nature or art—that is the logical dilemma that confronts us. But let it be insisted that Rabelais did not incorporate himself in his book. The self contradiction involved in such an hypothesis is so flagrant that it cannot be admitted. With art, then, we are dealing. And if art, what masterly, consummate art! A lord of Helicon has said that the artist's function is to "hold the mirror up to nature." The painting of Zeuxis deceived the birds, and that of Parrhasius deceived Zeuxis. Rabelais's art is true enough to trick one into the belief that he draws his materials from *son propre fonds.* Proof and probability to the contrary notwithstanding, we are half inclined to deem him the ribald, carousing sensualist of his creation. His enemies, however, did not make any such mistake. These were the representatives and beneficiaries of the tyrannies and evils which he attacked. And they poured out the vials of their wrath upon him, and hounded him about the earth, and drove him precariously close to the stake, not that they thought him vicious, but because they held him to be a dangerous changer of things; not as a corrupter of morals, but as a reformer of customs and institutions.

Having concluded with regard to the buffoonery of Rabelais that "though this be madness, yet there is method in 't," some study may be given to the method of it, itself, as to its end. After all, the justification of the Rabelaisian obscenity lies in its meaning and purpose. And the first explanation suggesting itself is that Rabelais is applying the principle of *similia similibus curantur;* that he is simply treating filthiness with filth. At their feasts the Spartans would make a slave drunk to disgust their youth with drunkenness. Analogously, the best way to kill a bad law is to enforce it. We have already noticed the lewd element in the literature of the sixteenth century. Were one to have proposed mending the situation what were an effectual way? To attempt to help matters by formal, dignified protest would have been to absurdly overshoot the mark. The wise, tactful man would do just what Rabelais seems to have hit upon; he would reduce even coarseness to a caricature; he would so out-Herod Herod that moral laxity itself would be shocked; he would mix such a sickening dose that a public of average sense and of at least potential decency would have no further cravings for stuff smacking of its flavor. Rabelais plays this rôle so perfectly that but rarely do we discern the actor. Yet now and then may he be detected. The Queen in *Hamlet* says: "The lady doth protest too much, methinks." And Bulwer Lytton has his Richelieu saying of a traitorous henchman, "He bowed too low." So at times the mask slips for an instant from the face of the clown; and we get a glimpse of the kindly features of Doctor Rabelais, the champion of tolerance, and the apostle of the genial creed, "It is better to write of laughter than of tears."

The roaring buffoonery of Rabelais has still other justification in that it was a means of securing for his book wide circulation and eager interest. An author first of all needs to be taken notice of. To write a book which nobody reads is discoursing to the winds of the desert. What good comes from producing a work whose first and sole edition moulders in the graveyard department of select libraries? A young preacher prepared his maiden sermon on the text, "As I live, saith the Lord God, I have no pleasure in the death of the wicked." After its delivery he wakened up to the fact that his entire congregation consisted of a bunch of elderly ladies professing sanctification. Rabelais shrewdly provided that he should have the circle of readers he desired. He, himself, slyly remarks, "Everybody has well known, by infallible experience, the great propriety and utility of the Gargantuine chronicle; for there have been more copies of it sold by the publishers in two months than of bibles there shall be bought in nine years." His book was not created to be its own end; it was an instrument to an end; and Rabelais knew how to form the tool for the work.

In a reform movement a first consideration is the safe guarding of the reformers. An indispensable factor in the emancipation of the Hebrews was the preservation of Moses. What had become of the German reformation had Luther, Hermann reincarnate, failed of an Elector of Saxony and a Wartburg! Heroic and glorious is it for a man to consecrate his ideals with his blood. Just beyond martyrdom in a holy cause is an apotheosis. But for all that, so far as is concerned the fighting of humanity's battles, a live reformer is surely worth more than a dead one. Said a military commander to a subaltern officer, "Take that fort." Replied the subaltern, "I will do it or die." Rejoined the commander, "I did not tell you to die; I told you to take that fort."

But, figuratively speaking, storming strongholds in the sixteenth century was an extremely hazardous undertaking. The fires of persecution were burning fiercely. Heresy was blackest treason. To dissent was to defy God in Heaven and his vicegerents on earth. The rage of intolerance was limited to no place or sect. Savonarola died at Florence at the instance of the Pope. Sir Thomas More died at London at the instance of the Anglican, Henry. Dolet died at Paris at the instance of the Sorbonne. Bruno died at Rome at the instance of the Inquisition. Servetus died at Geneva at the instance of Calvin, Bullinger defending the action, and Melanchthon seeing in it only cause for gratitude.

And in the midst of this hell of clashing opinions comes Rabelais. Legend tells how the earlier Brutus counterfeited idiocy while biding his time in the palace of Tarquin the Proud; how Palamedes found Ulysses in feigned madness plowing with an ox and an ass yoked together, and sowing his furrows with salt; how David at the court of Achish in Gath changed his behavior, making of himself a driveling fool scribbling on the doors of the gate,

And Rabelais, too, transfigures himself. He muffles himself in a cloak of revelry and ribaldry. The bigots of the Sorbonne suspect him in spite of his inimitable acting. They dog his steps. They almost get him at bay. He more than once comes alarmingly near the fire. But he eludes his foes, and dies in his bed. To the mind of the writer one of the finest and most epic things in the history of civilization is the spectacle of Rabelais out from his disguise stepping forth like the god of the unerring bow, a very Apollo Belvedère, driving home his death dealing shaft, and then springing back again behind his mask of Silenus.

Rabelais's life, itself, seems to have been without reproach. That his reputation in this regard has not been seriously and responsibly besmirched is high tribute to the man. His enemies would have rejoicingly laid bare any real defect of character. As a freethinker, and not as a wrongdoer, was he denounced. In his relations to state, church, and society he is charged with no vital fault. And he appears to have been equally blameless in his private life. As a matter of course gossip could not pass him by; but gossip too often follows the path of slander to be trustworthy. And, besides, the demander of perfection should be very sure of his own perfections. Said the Quaker, "Everybody is queer, wife, but thee and I; and sometimes thee is queer." The spirit of the times of Rabelais was the spirit of these lines of that period—

"Wer nicht liebt Wein, Weib und Gesang,
Der bleibt ein Narr sein Leben lang."

It is not well to poke one's nose very far into that *pot pourri.* Too much must not be demanded of a monk of the sixteenth century. Already for four hundred years the pathetic *faux pas* of Abelard had been a monument of the imperiousness of the voice of nature. Theoretically and officially the clergy was celibate; but practically and privately not infrequently the situation was astonishingly otherwise. And then, too, from St. Paul's day down there has been a tradition among unmarried churchmen that it is not a bad thing to "take a little wine for the stomach's sake." Furthermore, the ancient legend that the lion runs when the cock crows latterly has been reversed. For generations has it been supposed that the cock runs when the sacerdotal lion roars.

But aside *persiflage.* Rabelais was loyal to duty. He was the devoted alleviator of suffering. He was gentle, sympathetic, benevolent in his intercourse with the common people. He gave away most of his livelihood. His will is richly Rabelaisian: "I have nothing of value; I owe much; I give the rest to the poor." He lived out practical Christianity, and he died Christian. His good humored skepticism was with him to the last, however. He said to the friend who administered to him the viaticum: "You are greasing my boots for a long journey." To a page whom the Cardinal de Châtillon sent to inquire about him he remarked: "I am going away to seek a great perhaps."

But what matter though he could not solve all his doubts? What if it cannot be wholly said of him that

"He faced the spectres of the mind
And laid them"?

Doubt is knowledge born. It is the price of learning and free thought. In the intellectual sphere to doubt is not to be damned. Aye, rather is cocksureness damnation; cocksureness, the which breeds bigotry and presumption and self righteousness. Tennyson has his Knight, Edyrn, refer to a certain time in his life as

"Once, when I was up so high in pride
That I was half way down the slope to hell."

Ever and ever honest, enlightened doubt leads on to charity and humility. And these are the gateway to the kingdom of Heaven.

And now we take our leave of Rabelais; our Doctor Rabelais; Rabelais, the great scholar, the great thinker, the great writer; Rabelais *one* of the greatest of the reformers of an age of great reformers—we should say *the* greatest of them were we not just here inspired with a bit of Rabelaisian discretion.

STATE PHTHISIOPHILIA AND STATE PHTHISIOPHOBIA, WITH A PLEA FOR JUSTICE TO THE CONSUMPTIVE.*

By S. Adolphus Knopf, M. D.,
New York,

Professor of Phthisiotherapy at the New York Postgraduate Medical School and Hospital; Visiting Physician to the Riverside Hospital; Associate Director of the Clinic for Pulmonary Diseases of the Health Department.

This distinguished body is composed of students of tuberculosis not only in its medical or purely clinical, but also in its general or its purely sociological aspect; therefore, in presenting to them these two new phases of the conditions which confront the investigator as well as the worker, I feel that I need offer no apology. It seems to me that it is the duty of this association to take up all problems the solution of which may tend to further our holy cause. This work includes not only the study, prevention, and cure of tuberculosis *per se,* but also securing justice for the consumptive, who is persecuted or shunned because of his disease, or subjected to treatment which would not be given him were his social position a different one; in other words, it is our duty to give to the consumptive poor the same privileges and rights which are accorded to tuberculous patients in better circumstances.

For a state to enact a law that its consumptive poor must subject themselves to a certain kind of specific treatment which, up to this date, has not proved to be either efficacious or absolutely safe, and to which they would not need to submit themselves had they the means to be treated outside of State institutions, is, according to my humble judgment, an unjust, unwise, if not a dangerous, phthisiophilia.

The State of Nebraska has recently passed a law from which I quote herewith the following in full:

*Read before the Clinical Section of the sixth annual meeting of the National Association for the Study and Prevention of Tuberculosis, at Washington, D. C., May 3, 1910.

INDIGENT CONSUMPTIVES.

4407. Sec. 4. (Consumptives, hospital care.) Any person who is afflicted with tuberculous disease of the respiratory organs of a curable nature, and who has been a resident of this State for at least one year continuously preceding the application for his or her admission to a hospital under the provisions of this act, and who is without means to pay for hospital care and treatment, may be admitted to such treatment under the provisions of this act.

4707. Sec. 5. (Board of Health—Duty.) It shall be the duty of the Nebraska State Board of Health to institute inquiry for and receive applications from hospitals in this State for the care and treatment of the persons described in Section One of this Act. It shall pass upon and make a list of the hospitals suitably equipped and managed and willing to receive patients under this act, and send a list thereof to each county clerk in the State. It shall prescribe regulations for the care, housing, and nursing of such patients and see that the same are complied with. Provided that the charge at any such hospital for any patient under this act shall not exceed seven dollars per week and shall include board, lodging, care, and medical services. Provided, further, that it is made obligatory for any such hospital or sanatorium to use the modern treatment by immunization (vaccine therapy) in addition to open air and other sanitary methods.

4707. Sec. 6. (Expense by county.) It is hereby made the duty of each county in this State to bear the pecuniary burden of caring for the persons described in Section One of this Act in the manner provided by this Act. Upon written application to the county judge signed by the person seeking treatment or by some relative or friend, setting forth the name, residence, and circumstances of such person, the county judge shall order a hearing and examine under oath such persons as may be required by him to establish the facts. If the county judge shall be satisfied that all the conditions named in Section One of this Act are fulfilled, he shall approve the application in writing and certify the same to the county board of that county. It shall therefore be the duty of the county board to provide for transportation of such person to some hospital in the State approved by the State Board of Health and willing to receive such patient, and to pay for his or her care and treatment there. Provided, no person shall be cared for under the provisions of this Act without a certificate from a practising physician that such person is afflicted with tuberculous disease of the respiratory organs of a curable nature.

I call your attention to paragraph 4707, Section 5, which defines the duties of the Board of Health in cases of incipient consumption. The last paragraph reads: "Provided, further, that it is made obligatory for any such hospital or sanatorium to use the modern treatment by immunization (vaccine therapy) in addition to open air and other sanitary methods."

When, some time ago, a Dr. J. H. Tyndale, of Lincoln, Neb., wrote me that he had caused a law to be passed which made vaccine therapy obligatory in the treatment of indigent consumptives throughout Nebraska, I could not believe it possible. I called the attention of our distinguished executive secretary, Dr. Farrand, to the matter. His inquiries confirmed that such a bill had really been passed by the Nebraska legislature and is now a law on the statute book of that State.

To learn the opinion of some of my distinguished colleagues on this subject, I addressed a letter of inquiry to them and asked for an answer to the following question:

Do you believe that the studies, experiments, and achievements in tuberculous immunization, tuberculous vaccine, or serum therapy, up to this date, entitle any federal, State, or municipal legislature to make immunization or vaccine therapy obligatory in cases of patients who, because of their poverty, had been obliged to enter a federal, State, or municipal institution for treatment and care?

Every one of the thirty-six gentlemen to whom I had addressed the letter of inquiry honored me with a reply. Let me first read to you the answers from some of the men to whom, I know, all of us look up as teachers and leaders.

Professor A. Jacobi, the nestor of American physicians, whose eightieth birthday we are going to celebrate within a few days, who is as bright and keen of intellect and full of bodily vigor to-day as the youngest of us, and whose love for his profession, whose devotion to humanity and civic duty should forever be an inspiration to us, has said: "The plan to force a treatment which is not generally approved—far from it—is inconsiderate; and as the patients are poor and helpless, inhumane. The belief or opinion of an individual practitioner who happens to be influential with legislators should not weigh against established knowledge and common sense."

Professor Edward G. Janeway, who honors us by presiding over our general meeting this year, answered with a decided "No." And the same reply I received from Professor Barker, who honors us by being the chairman of our section.

Professor William Osler, of Oxford, after answering with an emphatic "No," added: "I am glad you are doing something in this matter. It is an outrage to ask people to subscribe to such nonsense. Why not test all the members of the Nebraska legislature with tuberculin? Fifty per cent. of them would react. Your paper should do a great deal of good."

Dr. Edward L. Trudeau, the pioneer of the sanatorium treatment in this country, and one whose researches in bacteriotherapeutics in tuberculosis are accepted as authoritative, replied: "It seems difficult to understand how any State can make compulsory any treatment of disease, and more especially a treatment like tuberculin in tuberculosis, the benefit of which is as yet an open question and which is not at all generally accepted by the great majority of the profession. There is not the slightest proof, either clinically or as derived from the evidence given by animal experimentation, that tuberculin immunization means immunity to tuberculosis, and it will be some years before the exact value of tuberculin as a therapeutic agent and its best method of application are definitely settled."

Professor Hermann M. Biggs, the pioneer and indefatigable advocate of public measures in the prevention of tuberculosis, through whose efforts so much has been accomplished in the municipal control of the disease, said: "Any law requiring tuberculous persons to submit to the use of a specific therapy is absurd."

And here is what our beloved Professor William H. Welch, whose authority on the subject of serotherapy nobody would wish to question, says in reply: "I do not believe that our existing knowledge warrants the State to enact legislation making obligatory treatment of pulmonary tuberculosis by specific immunization or vaccine therapy in institutions supported or aided by the State."

And as next in order of replies from this galaxy of great men, permit me to mention the most illus-

trious pupil of Professor Welch, Dr. Simon Flexner, the director of the Rockefeller Institute and discoverer of the antimeningitis serum. He wrote: "I desire to state that I do not believe that we possess, at the present time, an experimental or observational basis which suffices to justify any federal, State, or municipal legislature in prescribing any form of specific treatment for tuberculosis."

For the sake of brevity I will merely quote the most striking sentences from the remaining answers, avoiding repetitions as far as possible.

Dr. Howard S. Anders, of Philadelphia: "The application of such procedure, in democratic America especially, by governmental coercion instead of individual voluntary choice or sanction, is surely unconstitutional, and savors even of the brutal and mediæval spirit."

Dr. Edward R. Baldwin, of Saranac Lake: "The Nebraska law is absurdly preposterous, unenforceable, and, if not unconstitutional, ought to be."

Dr. Sidney F. Blanchet, of the Adirondack Cottage Sanatorium: "I do not see how any legislature could pass such a law and especially how they could insist on patients taking the vaccine invented by a doctor belonging to that State."

Dr. Sherman G. Bonney, of Denver: "I do not think you can be too emphatic in denouncing such legislation."

Dr. Solomon Solis Cohen, of Philadelphia: "The idea would be ludicrous were it not so serious."

Dr. George Dock, New Orleans: "I cannot understand how any Federal, State, or municipal legislature can order immunization or vaccine therapy for any patients. While observations by competent men are highly desirable in these lines, indiscriminate experimentation would be utterly misleading and altogether inhumane and unwarranted."

Dr. Henry B. Favill, of Chicago: "There is no evidence to show that serum treatment adds any factor of benefit in a large percentage of curable cases."

Dr. G. Walter Holden, of Denver: "I consider the experimental stage of vaccine or serum therapy in tuberculosis has not been passed as yet."

Dr. Theodore C. Janeway, of New York: "I feel very strongly that no legislative body can possibly be in a position wisely to prescribe the form of treatment which shall be used in any institution for the care of sick persons."

Dr. Herbert M. King, of Liberty, N. Y.: "Our present knowledge of the subject, and the experimental data at present available, by no means justify such an act."

Dr. Edward O. Otis, Boston: "I do not believe that there is any form of vaccine therapy known to-day that will immunize a tuberculous patient."

Dr. F. M. Pottenger, Monrovia, Cal.: "While I believe as firmly in the power of tuberculin, when given properly, to increase the immunity of patients suffering from tuberculosis as a surgeon believes in the ability of the knife to remove operable conditions, yet I do not think that Federal, States, or municipal legislatures should make the tuberculin treatment obligatory by law. I believe this should be left entirely to the medical heads of the institutions."

Dr. Theodore B. Sachs, Chicago: "The function of the government in reference to communicable diseases lies in the enforcement of measures of prevention. A selection of any particular method of treatment is the inalienable prerogative of the patient, in so far as the application of the method does not interfere with the interests of the community."

Dr. W. S. Thayer, Baltimore: "My answer is obviously 'No.' No other answer could be given by any one who is in the least familiar with the studies, experiments, and achievements of tuberculous immunization."

Dr. Victor C. Vaughan, Ann Arbor: "That's right, pitch into them. My attention was called a year ago to a law passed by the Legislature of Nebraska. I certainly do not believe that any form of vaccination therapy for tuberculosis should be forced upon any one."

Dr. H. Bascom Weaver, Asheville: "The science of medicine has not so far arrived at that stage of perfection, which in the person of one Dr. J. H. Tyndale would justify a legislative body in the enactment of a statute compelling a person to submit to his method of administration of a substance of unknown scientific purity and efficacy."

The following gentlemen simply answered the question in the negative: Dr. W. Jarvis Barlow, Los Angeles; Dr. Frank Billings, Chicago; Dr. P. M. Carrington, San Diego, Cal.; Dr. Thomas D. Coleman, Augusta, Ga.; Dr. R. H. Fitz, Boston; Dr. David R. Lyman, Wallingford, Conn.; Dr. John H. Musser, Philadelphia; Dr. William Porter, St. Louis; Dr. A. Alexander Smith, New York city; Surgeon General George M. Sternberg, Washington; Dr. T. M. Tyson, Philadelphia; Dr. Gerald B. Webb, Colorado Springs.

It is possible that among my hearers there may be some who will say that it was not worth the while to go to all this trouble. Nebraska is only one State and this association is not responsible for peculiar State legislation. For a little while I was almost inclined to take the same view, but in the February number for 1910 of the *Zeitschrift für Tuberkulose* there appears an article entitled "Der Kampf gegen die Tuberkulose in den Vereinigten Staaten" written by Dr. Ernst Schultze, of Grossborstel. On the whole this article is flattering to the efforts made in this country to combat tuberculosis effectually, but when I read the two concluding paragraphs I felt a sense of shame and humiliation. I do not care to reproduce here either in the original nor in the translation the terms used by Dr. Schultze in condemning the Nebraska law and its author. Those who care to read the original can find it in the article I have referred to. As for myself, I do not quite like such strong terms as he uses, nor do I think them just. I would rather believe that Dr. Tyndale was moved in this matter by unselfish motives, though he evidently erred, but it is our duty to let the world know that we do not approve either of his methods or of such State legislation.

The second paragraph in Dr. Schultze's report relates to an incident of medical politics which as

an American physician I cannot allow to stand unchallenged. I will give you as exact a translation of this statement as possible: "By 'medical politician' in the United States ('ärztlicher Politiker') there is not to be understood a man who by political means desires to further public health, but, on the contrary, a man who has received his office in the health department for political reasons and utilizes this office for his personal gain. For example, let me relate the following: Such a medical politician in South Carolina received a delegation of physicians asking him to further certain hygienic reforms and endorse, in his official capacity, the proposed legislation relating thereto. He frankly replied, 'Why do you want to create laws to prevent people from becoming sick? Do you not realize that if you do so you cannot make any money?'" Dr. Schultze maintains that such sentiments are not rare in the United States and that with us the medical politician is a byword. He furthermore makes the statement that only one fourth of our State health departments do their duty.

I am not in a position to question this statistical statement, but even if the incident in South Carolina is true, I wish to state that in my somewhat extensive dealings with health officials I have never heard any one in public office express similar sentiments and I do not believe that the incident could possibly be duplicated. With all the faults of our relatively young civilization, the American medical profession has upheld its ideals, and I think, as far as the observance of a high medical code of ethics is concerned, the American medical profession compares favorably with that of other countries.

I come now to the second portion of my paper, which, in contradistinction to phthisiophilia—an excessive or overcare for the consumptive on the part of the State, I call State phthisiophobia. I believe that I can best explain this as an exaggerated fear on the part of the State authorities of the presence of consumptives. That the fear of the consumptive in this instance should not be a fear of the ordinary consumptive, rich or poor, and ignorant of the necessary precautions, but a fear of the consumptive physician, and that it should have originated among physicians enjoying health and prosperity, is in my opinion one of the saddest manifestations of this the most cruel type of phthisiophobia which it has ever been my misfortune to observe during well nigh twenty-five years of life in the midst of consumptives of all degrees of intelligence and social positions, in various climes in this country and abroad.

As in the case of the Nebraska legislature, I did not care to rely on rumors, on one man's tale, or on newspaper information. That any State legislature could be so narrow minded, unjust, and prejudiced as to refuse to grant a license to practise to a physician because he is afflicted with tuberculosis, is almost beyond comprehension, and I could and would not believe it until I had absolute evidence.

A distinguished physician of New York, whom I have had under my care for a number of years, wrote to Dr. F. P. Davis, the secretary of the Board of Medical examiners of the State of Oklahoma, asking for information concerning the formalities he would have to comply with in order to receive a license which would entitle him to practise medicine in that State. Incidentally he mentioned that he was slightly afflicted with tuberculosis. The doctor was good enough to send me the original reply, which I have in my possession. It reads as follows:

State of Oklahoma, Board of Medical Examiners.
Frank P. Davis, M. D., Sec'y, Enid, Oklahoma.

Members.

Dr. W. T. Tilley, Muskogee.
Dr. H. C. Montague, Muskogee.
Dr. A. M. Chambers, Poteau.
Dr. D. W. Miller, Blackwell
Dr. F. P. Davis, Enid.
Dr. A. M. Butts, Holdenville.
Dr. L. E. Emanuel, Chickasha.
Dr. A. R. Lewis, Ryan.
Dr. J. Hensley, Oklahoma City.

December 7, 1909.

Dear Doctor: Replying to your favor of the 2nd. This Board does not grant license to physicians who are afflicted with tuberculosis

Enclosed you will find a copy of the affidavit attached to all our application blanks, also copy of instructions which will give you the desired information.

Any further information will be gladly furnished.

Very truly yours,
(Signed) Frank P. Davis.
Sec'y State Board of Med. Examiners.
A. E. S.

The most marvelous piece of evidence of this new type of phthisiophobia, which might be called professional phthisiophobia, is the tuberculosis affidavit which must be sworn to by the applicant and signed by another Oklahoma physician who has examined him and reported him as free from tuberculosis. Here is an exact copy of the blank in my possession with which my tuberculous colleague was furnished:

tuberculosis affidavit.

I further state that I am not now suffering with tuberculosis in any form; that I have not in the last three years lived in the house with, or nursed any one suffering from said disease That I have not opened an office or began practice in the State of Oklahoma, and will not do so until I will have received the proper authority from the State Board of Medical Examiners.

Subscribed and sworn to before me this ..... day of ..... 1909.

I, ———— a legally qualified physician in the State of ————, have been acquainted with ————, whom I know to be the same person making an application to which this is attached; that I have known ——— for three years, and have made a thorough examination and find ——— to be free from tuberculosis.

My State license is No. ....

Subscribed and sworn to before me this .... day of ..... 1909.

Think of the absurdity of asking any physician to make a statement that during the last three years he has not lived in the house with, or nursed any one suffering from said disease! How many physicians in any large city, obliged to live in large apartment or flat houses, could swear to such a statement, and how many of us general practitioners or specialists, who treat tuberculosis and who are so fortunate as to call a little house their own, would wish to swear that during the last three years they

had not nursed any one suffering with tuberculosis?

The modern phthisiotherapeutist does not do much else but nurse his patients. The administration of medicine is certainly of minor importance. The words "nursed any one suffering from tuberculosis," as used in the affidavit, can mean nothing very different from treating tuberculosis. If it meant strictly that the physician should not have performed the duties of a trained nurse, then the Oklahoma legislature is making a serious mistake in not also excluding from service in that State all trained nurses who may have taken care of a tuberculous patient during the last three years.

What would our tuberculosis science be to-day if Brehmer and Dettweiler, who were both tuberculous, had been forbidden to practise medicine in Germany? If Finsen, of Norway, had not been allowed to practise in his country? If Laennec, Bichat, and Grancher had been forbidden to exercise their profession in France? What if Solly had not been permitted to enter and practise in Colorado? Or our own Trudeau, Baldwin, and Brown could not have got a license to practise in New York? The examples are too numerous to continue.

Have the men who promulgated this cruel law ever thought of the thousands of men, women, and children who were restored to health and usefulness because men like Laennec, Brehmer, Dettweiler, Finsen, Grancher, and our own much regretted Solly, McGahan, and Foster have lived? Do the men in Oklahoma know what we owe to men like Trudeau and his coworkers, Baldwin, Brown, and others, who are daily laboring among the tuberculous, though they themselves have been afflicted with the disease? Have they forgotten that Trudeau, twenty-five years ago, though afflicted with a seemingly hopeless pulmonary tuberculosis, built the first sanatorium, and that as a result of his example and teachings we have to-day in the United States nearly 400 of these life saving institutions? Have these colleagues of ours in Oklahoma ever thought of the fact that by excluding physicians afflicted with tuberculosis from their State, they will increase the fear of tuberculosis in their community to a most dangerous degree and further phthisiophobia among the masses, thus rendering the life of the average consumptive a hundred fold more unhappy than it is already?

But it may interest my hearers to know what the opinion on this question is, not of men who, because of their physical illness, may feel too sensitive to answer the question, but of men who are not tuberculous and who certainly could not be accused of being personally interested in this peculiar phase of phthisiophobia. I have asked a number of our leading practitioners in various parts of the country whom I know to be healthy and hearty and not afflicted with tuberculosis, the following questions:

Will you have the kindness to express to me your opinion regarding the justice, humanity, wisdom, and scientific basis of the action of the State Board of Medical Examiners of Oklahoma which excludes tuberculous but otherwise well qualified practitioners from practising in Oklahoma?

Will you also please express your opinion regarding the affidavit of which I enclose an exact copy and which must be sworn to by every practitioner and signed by another practitioner already a resident of that State before a license can be granted to him to practise in the State of Oklahoma?

To these two questions the answers were likewise most interesting, decisive, impressive, and in some cases burning with indignation. For the benefit of our Oklahoma colleagues, I reproduce a number of the statements expressed by men of the highest standing in our profession.

I will follow the same order I used in reproducing the replies regarding the Nebraska matter:

Dr. A. Jacobi: "The stipulations contained in the Oklahoma arrangement are simply ludicrous. They are the outcome of gross ignorance and open the door to whimsical jealousy on the part of the practitioners of Oklahoma. The whole thing is a sort of shotgun quarantine. Try to stop the mischief threatened by uninformed people and criminal exclusion."

Dr. Edward G. Janeway: "I think that is a very oppressive measure, and one not either humane nor just. As regards the affidavit, I think that is an additional oppression, especially the part which requires the practitioner to say 'he has not lived in a house with a consumptive or nursed any one suffering from the disease. These measures, it seems to me, are ill calculated to advance the best interests of the struggle against tuberculosis."

Dr. William Osler: "I would apply the von Pirquet test to all the medical examiners of Oklahoma, and those who reacted might be asked to leave the State. The tuberculous affidavit is absurd."

Dr. Hermann M. Biggs: "The action of the State Board of Medical Examiners in excluding tuberculous practitioners is absolutely unjustifiable. It seems to me incredible that such a law, as apparently exists in Oklahoma, could be enacted by a sane body of men."

Dr. William H. Welch: "I regard the action of the State Board of Medical Examiners of Oklahoma, as indicated in your question and expressed in the copy of the 'Tuberculosis Affidavit,' accompanying your letter, as ill advised, unjust, and inhuman."

Dr. Simon Flexner: "I would emphatically state that I do not believe that it is just or desirable that any physician, whether tuberculous or not, should be subject to the restriction which is placed upon them by the act mentioned, empowering the Board of Medical Examiners of Oklahoma to exclude them from the practice of their profession. I, therefore, regard the affidavit which is required under this act as being both unjust and superfluous."

Dr. Howard S. Anders: "I cannot understand the science, wisdom, or justice of such action in Oklahoma or elsewhere. I think the affidavit borders on impudence and manifests an attitude of undignified distrust of the professional knowledge and responsibility."

Dr. Edward R. Baldwin: "I think our medical confrères on the continent were quite justified in their satires, and it will be hard for them to understand that ridicule of this kind does not involve the great majority of the medical profession of the United States. Nevertheless, I reiterate my opin-

ion that the Oklahoma law excluding tuberculous practitioners could not be enforced against an appeal, and I submit to any crossroads lawyer that such a thing as quarantine legislation is open to very wide ranges of interpretation. Of course, it is annoying and would require a fight, but I understand Oklahoma has even passed laws specifying the length of sheets in hotel beds! These are all in the same class with the law proposed to prevent the marriage of tuberculous patients."

Dr. Lewellys F. Barker: "(2) Unwise and inhuman; to question (3) disapprove."

Dr. Frank Billings: "It is malicious and unjust. Such an affidavit is unjust to an individual suffering from tuberculosis and equally to a physician who desires to practise in the State of Oklahoma. It looks like an attempt on the part of the medical profession of Oklahoma to exclude practitioners from settling in the State."

Dr. Sidney F. Blanchet: "I am very glad to hear that you are bringing these questions up at the next meeting and hope that something will be done to make such legislation as that of Nebraska and Oklahoma impossible. It seems outrageous."

Dr. S. G. Bonney: "As in the Nebraska matter, you cannot be too emphatic in denouncing such legislation."

Dr. Solomon Solis Cohen: "The Oklahoma ruling has no scientific basis. The affidavit is neither necessary nor just. It is not founded on knowledge, but on ignorance—not on wise caution, but on senseless fear."

Dr. Thomas D. Coleman: "Such laws, whether enacted in Oklahoma, New York, or Georgia, should be submitted to review by the United States Supreme Court."

Dr. George Dock: "It is difficult to answer these questions in anything like a cool manner, but I shall do my best. I can see neither justice, humanity, nor wisdom, and no scientific basis whatever, for the action of the State Board of Medical Examiners of Oklahoma, which excludes tuberculous or otherwise qualified practitioners from practising their art in Oklahoma. The copy of the affidavit is so absurd that it is impossible to describe it in polite language. I do not suppose it is constitutional; but if it is, do not see how any self respecting practitioner can enter the State to practise, or subscribe to the affidavit having entered it."

Dr. Henry B. Favill: "With regard to the question, the problem is much broader and it is strictly an ethical question. Shall a State because it desires to give itself a certain undeniable advantage in the personnel of its medical faculty, take a position which if taken by all States and all communities would be in the highest degree ill advised and unsocial? On that broad proposition, I should say that this provision in the laws of Oklahoma is short-sighted and unwise. Furthermore, the cause of the antituberculosis crusade in my judgment would be retarded by such general policy for at least two reasons: First, it fosters an unreasonable fear of tuberculosis which among intelligent people should not exist. Second, it is likely to deprive a community of the highest type of medical minds which tend to concentrate scientifically and ethically upon this great problem."

Dr. R. H. Fitz: "I consider it undesirable to restrict the practice of medicine to physicians free from tuberculosis in any form."

Dr. G. W. Holden: "Unjust, inhuman, and a disgrace to the intelligence."

Dr. Theodore C. Janeway: "I do not see how there can be two opinions about the inhumanity of the provision of the State Board of Medical Examiners of Oklahoma. I should think it probable that the unwisdom was equally incontestible, for it will merely serve to exclude a very small proportion of tuberculous individuals from the State and accomplish nothing in the way of effective quarantine, which from the nature of tuberculosis is a wholly impossible undertaking in any event. I am exceedingly glad you are going to take up the matter before the National Association."

Dr. David R. Lyman: "I should think the profession in Oklahoma should be ashamed to go on record as being afraid to enter into competition with the practitioners of other States who are already laboring under the handicap of tuberculosis."

Dr. John H. Musser: "The law is just in one sense. If all classes are treated in this manner, the physician must take his chance with the others. It is unjust when we know of the labors of Trudeau, etc., etc. It should be amended so that the physician would be compelled to obey restrictions or hygienic regulations. Extremists on contagion theory of tuberculosis must support this first portion of the affidavit. It is the outgrowth of our insistence. The other (relating to the three years, etc.) is silly."

Dr. Edward O. Otis: "Unjust, unwise, and unnecessary, and I doubt if it can be enforced. The whole principle is wrong, and such a step will not, in my opinion, tend to eradicate tuberculosis in Oklahoma. The affidavit is most selfish and narrow, and is evidence of a low standard of intelligence among the profession and people of Oklahoma. Furthermore, it is obviously easy to evade the requirements by collusion and false swearing. It would be interesting to know what body of officials devised such an affidavit."

Dr. William Porter: "Unjust, cruel, unnecessary. Such ignorance and foolishness is paying tribute to selfishness. I am glad you will denounce it."

Dr. F. M. Pottenger: "Such a procedure cannot help but foster an unjust prejudice against the tuberculous. The affidavit which is required to be signed by the applicant cannot help but arouse our sympathy, both for the applicant who is unjustly treated and for the framers of this affidavit, who show such a total lack of appreciation of tuberculosis and its real dangers. I do not question the motives which inspired this affidavit, but its wisdom and scientific basis certainly are very questionable."

Dr. Theodore B. Sachs: "Medical training, familiarity with methods of prevention, and the fully developed sense of civic responsibility, make the physician the most important factor in the fight against every communicable disease, tuberculosis in-

cluded. This is particularly applicable to the tuberculous physician all over the world. In the universal fight against consumption, which is saving in this country thousands, tens of thousands of people, the tuberculous physician was always and is at present in the vanguard of the procession. No State has any right to exclude any one suffering with tuberculosis, the stricken physician in particular. Very few people could conscientiously sign the Oklahoma affidavit, with its ridiculous provisions."

Dr. A. Alexander Smith: "A most unjust and unwise movement on the part of the State Board of Medical Examiners of Oklahoma. The affidavit is unjust. It is in line with the misdirected efforts now being put forth in the fight against tuberculosis. Such legislation is bound eventually to do harm to the cause."

Surgeon General George M. Sternberg: "In my opinion physicians suffering from incipient tuberculosis, or arrested cases, should not be prevented from practising their profession. Physicians with advanced cases would not be able to continue in practice, and legislation upon the subject is unnecessary and is likely to prove mischievous. The tuberculosis affidavit is a ridiculous and unnecessary exaction."

Dr. William S. Thayer: "I can see no earthly ground for the exclusion of such practitioners; many of the greatest advances in the study of tuberculosis have been done by tuberculous individuals. No one is so able to illustrate the necessary means of precaution as he who has been obliged to learn for himself. Think of the lives Trudeau has saved. With regard to the affidavit you have enclosed, I can only say that I know of no human being who could be justified under any circumstances in subscribing to either. It would be stupid to pretend for a minute that any one could say with certainty that he himself, or any other individual, is free from tuberculosis. Let me thank you for taking hold of the matter which so closely effects the public."

Dr. James Tyson: "Unjust, inhumane, and unwise. Affidavit unreasonable and unnecessary."

Dr. Victor C. Vaughan: "I think that the physicians of Oklahoma need a drubbing, and I know very well that you are the man to give it to them."

When, about a year ago, I first read of this cruel phthisiophobia, I had my doubts as to the genuineness of the report. After its verification I prepared a paper which I read before the American Medical Association under the title of A New Type of Phthisiophobia. It was published in the *Journal of the American Medical Association*, liii, No. 13, and as a result I received a number of interesting letters wherein physicians in the prime of health and prosperity and others afflicted with tuberculosis expressed to me their gratification. It would, of course, be out of place to incorporate all such letters in this communication, but still there is one which is so full of meaning and pathos, that, with your kind permission, I will read it:

Dupuyes, Montana, October 14, 1909.

Dear Dr. Knopf: Thanks, much thanks, for that New Type of Phthisiophobia. I almost missed it, and disgust was changed to anger at the silence of the profession. Are you alone protestant? Has the medical profession become a wilderness, with but one voice? I wish you would tell a grateful exile of any other. If there is none, you shall have at least one echo.

Yours gratefully,
(*Signed*) C. N. Burke.

The preceding answers to my letters gave an expression of opinions on this subject, and the sentiment which will be expressed by this association at large, I am sure, will convince our unfortunate exiled colleague that he and all our colleagues afflicted with tuberculosis, as well as the consumptive poor and those of all other classes, have in the members of this association true friends and sympathizers, and that our highest aims will forever be *justice to the consumptive*.

In view of the opinions unanimously expressed by a large number of the influential members of our association on the dangers, the injustice, the inhumanity, and last but not least, the unscientific spirit expressed in the State phthisiophilia and State phthisiophobia described in the preceding pages, with the documentary evidence attached thereto, the following resolutions were unanimously adopted by the National Association for the Study and Prevention of Tuberculosis at its meeting in Washington in May, 1910.

REFERRING TO THE OKLAHOMA LAW:

Whereas, The Board of Medical Examiners of the State of Oklahoma refuses to grant licenses to physicians afflicted with tuberculosis; and

Whereas, All applicants for such a license must subscribe and swear to a so called tuberculosis affidavit in which they must not only declare that they are not suffering with tuberculosis in any form but also swear that they have not, within the last three years, lived in the house with or nursed any one suffering from said disease: and

Whereas, In the opinion of the members of this association such action of the State Board of Medical Examiners of Oklahoma is not based on sound scientific or economic consideration; and

Whereas, It is the conviction of the members of this association that neither the careful tuberculous physician nor the well trained tuberculous patient pursuing his occupation should be considered a menace to society. Be it therefore

Resolved, That this association deplores the action of the State Board of Medical Examiners of Oklahoma as unjustifiable and prejudicial to the best interests of the community, and

Resolved, That the executive secretary transmit a copy of these resolutions to the president and secretary of the Oklahoma State Board of Medical Examiners and to the Governor of that State.

REFERRING TO THE NEBRASKA LAW:

Whereas, The State of Nebraska has recently passed a law making it obligatory for hospitals and sanatoria receiving tuberculous patients supported by the public to use treatment by immunization (vaccine therapy); and

Whereas, In the opinion of the members of this association the present state of knowledge of specific immunization and vaccine therapy in tuberculosis does not justify any State in enacting such legislation; therefore

Resolved, That the National Association for the Study and Prevention of Tuberculosis deplores the above named act of the State Legislature of Nebraska as most unwise, and wholly unjustifiable. Be it further

Resolved, That the executive secretary of the association transmit a copy of these resolutions to the Governor of the State of Nebraska and the speakers of the senate and the house of representatives of that State.

16 West Ninety-fifth Street.

THE QUEST AND WINNING OF A VESICAL CALCULUS.*

By Martin W. Ware, M. D.,
New York,
Adjunct Surgeon, Mt. Sinai Hospital.

The surgical relief of stone of the bladder, as one of the ills that human flesh is heir to, has perhaps of all operations a most ancient lineage and has engaged the interest of the ancients in India. That the execution of this task was in the hands of specialists may be familiar to you in the lines of the Hippocratic oath: "I will not cut persons laboring under the stone, but will leave this to be done by men who are practitioners of this work." Up to this day, the spirit and letter of this injunction have been carried out.

The ætiology of stone in the bladder has remained shrouded in "Egyptian darkness," yet paradoxically, it has been the "stone sickness" born of Egyptian darkness from ancient days, which has been revealed by the light of modern science to be due to a plasmodial parasite,—the *Distoma hæmatobium* (Bilharz). In its isolation as a causative factor and because of its rarity, it might be dismissed forthwith but for the fact that emigrants to our doors from Mediterranean shores these days, will bring before us instances of this malady, to wit: the occurrence of two such cases within the past years at Mt. Sinai Hospital.

If much of the early history connected with stone concerned itself with the removal thereof, it remained for comparatively modern times to perfect the methods for the detection of the calculus. The presence of the stone is foreshadowed by symptoms common to any cystitis,—painful, frequent micturition with vesical crises, interruption of the stream, stammering of the bladder, vesical tenesmus, and incontinence; urgency of urination provoked by any violent excursions of the body in riding over rough roads or jolting in a conveyance. At such moments, the urine voided may be bloody, particularly in the terminal portions. Pains, with urination and independent of the act, may radiate over the prevesical, perineal, lumbar areas and pass on to the testes and to the tip of the penis. In the very young, it is the latter irritation that is responsible for the handling of the parts and the vicious habit of masturbation. The urine voided under these circumstances is for the most part cloudy and contains blood cells and pus elements together with the exfoliated bladder epithelium, and crystals, which if present in great quantity will betray the character of the stone. The reaction of the urine depends not so much on the character of the stone as upon the presence and variety of the infecting organism, most frequently introduced by instrumentation.

The aforesaid constitute the "rational symptoms" which by their presence invite a more extended search by physical means to positively establish the diagnosis of calculus,

Before resorting, however, to instrumental means it is meet to exhaust all natural means at our command to appreciate the stone. It is possible, in the very young, to feel per rectum by a digital examination, a stone,—and still better yet by a bimanual examination. To accomplish this, if necessary, a moderate degree of anæsthesia at times is used. Very large stones in adults may in like manner be felt by rectum and per vaginam where such examination is possible and permissible. If a step further is contemplated, we come to the parting of the ways, for from now on the searcher, cystoscope and x ray, mentioned in the order of their discovery, vie with each other for supremacy in the efficiency of detecting the stone.

If "seeing is believing," the cystoscope stands first, to give way, however, to the searcher, because "feeling is the naked truth," but spurned by the proverb,—*"cito, tuto et jucundo"* both fall as prey before the searching x ray.

The question of ascertaining the presence of stones presents itself to the general practitioner not always under ideal conditions, wherefor it would be idle to deny that with a properly constructed searcher embodying the features of a catheter, duly sterilized and under aseptic precautions introduced into a bladder with its urinary content or distended by an antiseptic lotion of saline or boric acid solution, it is not possible to detect the stone. Furthermore, inasmuch as an instrument has to be passed as a preliminary to introducing the cystoscope, in order to learn whether the canal is pervious, a stone searcher, in suspected cases, should be the choice.

Many of the patients inflicted with stone have also prostatic hypertrophy with such a narrowing of the canal as not to permit of the use of a cystoscope of calibre 23 French, and in very young children, a small cystoscope is most often not to be had, though I am cognizant of and familiar in the use of such instruments of the calibre of 15 French. Another indication contrary to the cystoscope lies in the fact that much washing is called for in the use of the latter where the vesical catarrh is severe.

The general practitioner, when he has a vesical stone suspect to deal with can more readily and sooner get the patient to submit to his introducing a searcher and thereby pave the way and gain his confidence for a cystoscopy subsequently. In breaking this lance for the searcher I do so to record that the time honored use of this instrument should not be judged an anachronism in the hands of the practitioner because of the extenuating circumstances mentioned. For the appreciation of small stones that would escape the searcher, Freyer suggested the use of the evacuating catheter and aspirating bottle. Suction therewith would dislodge such a small stone and produce an audible and tangible click. Nitze pertinently remarks that "the proper use of the cystoscope calls for greater delicacy than manipulation with the searcher, which, in order to detect anything, must everywhere touch the bladder wall, whereas the conservative principle of cystoscopy is to avoid contact with the bladder wall at all times lest the bleeding which follows shall obscure the vision." It is here that the cystoscope as an instrument of precision comes in for its just meed of usefulness. Stones that are too small to be appreciated by the searcher, stones hidden in diverticula, their number, size and shape, and all concomitant conditions of the bladder are at once revealed by the cystoscopic searchlight, and though it is beyond cavil that the most painless and innocuous

*Read, March 11, 1910, before the Eastern Medical Society of New York.

way of detecting stones in the bladder is by the use of x rays, there is so much more brought to light by the cystoscope, that the use of radiograms could be subordinated and judged superfluous, were it not that encysted stones as well as those concealed by an overgrowth of the prostate are invisible with the cystoscope but revealed by the x ray.

Furthermore, the need of ascertaining the simultaneous existence of stones in the upper urinary tract, calls for radiograms of the kidneys and ureter. This procedure, I think to be of paramount importance, and ought to be the part of a routine in the study of vesical stone thereby being forewarned and forearmed against complications arising from the urinary tract. For on two occasions, the successful removal of a stone by lithotomy was marred by such embarrassment, only subsequently learned. The one patient, after lithotomy, recovered after a nephrectomy for stone kidney, and the other patient succumbed to a death from anuria in a few hours and the existence of the bilateral renoureteral stone was only revealed at post mortem examination.

Particularly imperative is the use of a radiograph of both renal regions, even in the absence of symptoms pointing thereto, where the stone lodged in the bladder is of small size and entitled to be therefore regarded as not autochthonous, but a wanderer from the *hinterland* of the bladder. A stone, if small enough, may be passed *per vias naturales,* and hence it led Sir Henry Thompson into sophistry when, in his article, What is a stone in the Bladder?, he laid down the axiom: "Any calculus which can, by any means, be removed entire through the urethra, including one impacted therein and removed thence by the knife, cannot be admitted to rank as a vesical stone."

The refinement in diagnosticating the presence of a vesical stone is a certainty that has done away with the bravado of the surgeon of earlier days, who, we are told, never entered upon a stone operation without a stone in his pocket to avert the fiasco which would follow if none was found. Earliest records of history bear testimony to the removal of stone by cutting, and the thought thereby is awakened that, perhaps, man of the stone age alone succumbed to this malady unaided or perhaps he constituted the earliest victim of *similia similibus curantur.*

Lithotomy originally implied the chiseling of the stone thereby reducing its dimensions to permit of removal and by the figure of metonomy, the term was ever afterward applied to all cutting operations. A legion of operations, mostly perineal, has been so cut down that the suprapubic route in modern times alone survives, to the exclusion even of the median perineal operation.

In the ancient acceptation of the term, lithotripsy was a congener of lithotomy, and the idea remained dormant till the Middle Ages, when Albucassis (1533) appears as pioneer to do an intravesical lithotripsy. Then, through the dark ages, the idea slumbered until the earliest part of the nineteenth century, when it was taken up by Civiale and Heurteloupe and perfected by Bigelow, of this country, who still further enlarged its scope by litholapaxy.

At the threshold of a vesical stone, we are ever confronted with the choice of either cystotomy or lithotripsy. Both yield equally good results, but the reports of numerous surgeons the world over bear ample testimony to a vastly lower mortality after lithotripsy,—3.4 per cent., than after cystotomy,—fourteen per cent., where both procedures are familiar and have been practised at the same hands.

So much is certain, that the winning of the stone by the cut of a knife under cocaine is a brilliant performance to onlookers, yet one must have lived through an actual experience where this apparently slight insult to the tissues is resented by the human economy and turned into disaster, and eclipsed by the lithotripsy skilfully executed for like conditions. Out of such experience, the feeling will come not to be partial to either nor to speak of an operation of choice, but come to regard the selection between lithotomy and litholapaxy to be a matter of precision rather than a discriminating appreciation of either with a subsequent falling into lines of arbitrary indication and contraindication.

A small vesical calculus, however appreciated, may be aspirated with evacuating tube and catheter. It is the extremes in size of a stone, the very small and the very large or multiple calculi, that are unsuited to lithotripsy. The concomitance of calculus with prostatic hypertrophy gave a great impetus to lithotripsy, for stones were prone to recur as long as the obstructing prostate was not removed, and repeated lithotripsy became obligatory and was possible, whereas repetition of a cystotomy was not so. To-day, with suprapubic cystotomy and enucleation of the prostate, effectively removing prostate and stones at once, lithotripsy has received quite a setback. In a very small percentage of cases, quite negligible, detracting none from the merit of a prostatic operation, a small phosphatic vesical calculus develops in the bed of the former prostate, which stone has to be removed by lithotripsy.

Experts do not see in a stone impacted behind the prostate or encysted in a diverticulum a necessary contraindication to the use of the lithotrite. Unless the urine is comparatively clear, thus indicative of slight bladder infection, no primary suture of the bladder can follow the cystotomy, in which event the long after treatment stands out conspicuously against the short one week's confinement necessary in most lithotripsies.

It is opportune to counsel against executing lithotripsy on ambulatory patients, where the stone is small, or where the crushing is to be attempted in several short séances. Nothing is gained by lowering the dignity of lithotripsy and litholapaxy as an operation of magnitude and which calls for more skill than cystotomy, and necessitates the employment of all the arts and artifices inherent in any operation. Where calculi in the upper urinary tract complicate vesical stone it is desirable to remove the former first.

The purport of this paper has not been to exploit anything new or novel in connection with vesical stone nor to indulge in a destructive criticism of past efforts, but rather to show the vicissitudes that the treatment and care of those afflicted with vesical stone have undergone.

Before a representative body of physicians like this, comprising practitioners of every specialty, it is not of interest to enter into the technical detail

of operative procedures, and I would therefore have you regard this paper, with its shortcomings, as a mere urological fragment of vesical stone.

27 East Eighty-first Street.

VACCINE THERAPY IN SERIOUS INFECTIONS OF AURAL AND NASAL ORIGIN.

By Charles Graef, M. D.,
New York,
and R. B. Wynkoop, M. D.,
New York.

The following cases are given in detail from among those, now forming a list of very considerable length, in which we have successfully made use of vaccines in the Lincoln Hospital. The interest of these particular cases comes from the fact that in one, a clearly established case of septic thrombosis of the lateral sinus, recovery was secured without exsection of the jugular vein, while the other is, so far as can be learned, the first recorded case of meningitis, due to streptococcus infection, cured by vaccines.

Case I.—S. B., a boy of twelve years, had suffered for several weeks with an acute suppurative inflammation of the right middle ear for which he was treated at a dispensary. When brought to Dr. Graef's office he showed marked evidences of severe mastoiditis with urgent need for operation. On opening the mastoid, widespread necrosis of the bone with much pus was found. A thorough exenteration of the diseased bone was made. On exposing the lateral sinus pus was seen oozing from between the bone and the membranous wall, and this continued for some distance as the course of the sinus was followed until apparently clear territory was reached. The sinus was then opened and found to be free of obstruction and seemingly clean. The wounds were packed in the usual way.

The temperature, which was 103° F. and had remained about that with slight remissions for the twenty-four hours he was under observation before the operation, fell to 101.5° F. the next day and came down to 98.5° F. the second day after.

The patient then complained of marked tenderness along the track of the jugular vein on the right side of the neck and later in the day severe pain developed in the abdomen in the region of the appendix. Examination by the surgical staff revealed the presence of acute appendicitis and the boy was promptly operated upon by Dr. Putnam, who found the appendix full of pus, tightly distended, and on the point of rupture. It was felt that the child was too sick to be safely subjected to the added shock entailed by dissecting out the internal jugular vein, although the step was strongly indicated by the signs of a developing thrombosis and the certainty that infection of the blood stream must follow. It was determined instead to watch for blood infection and make use of vaccines as a remedy. The pus in the appendix showed the *Bacillus coli communis* only.

On March 17th, the day following the appendectomy, a blood culture was taken with negative results. There was increased tenderness, and pain on movement, along the jugular vein.

On March 24th streptococci in pure culture were obtained from the blood. Metastatic inflammation had appeared in the right shoulder and elbow, and an abscess developed a few days later on the dorsum of the right foot. This was opened and from the pus the streptococcus was obtained in pure culture. The same organism was found on the packing taken from the infected sinus. The inflamed joints in the upper extremity subsided without surgical aid.

As soon as the streptococcus was obtained a stock vaccine was procured and fifteen millions given by subcutaneous injection. Within twelve hours the temperature dropped from 105.2° F. to normal. On each of the two succeeding days a similar amount of the stock preparation was administered by which time the autogenous vaccine was ready. This was given in doses of ten millions daily for seven days. The doses were then increased by three million organisms each day until twenty-five millions were being given at a dose. By this time the temperature was down to normal, rising only one or two degrees each evening, and the vaccine was given in the same dosage but only twice a week. The patient left the hospital fifty-six days after the admission. He received altogether twenty-three doses of vaccine, aggregating 413 million organisms.

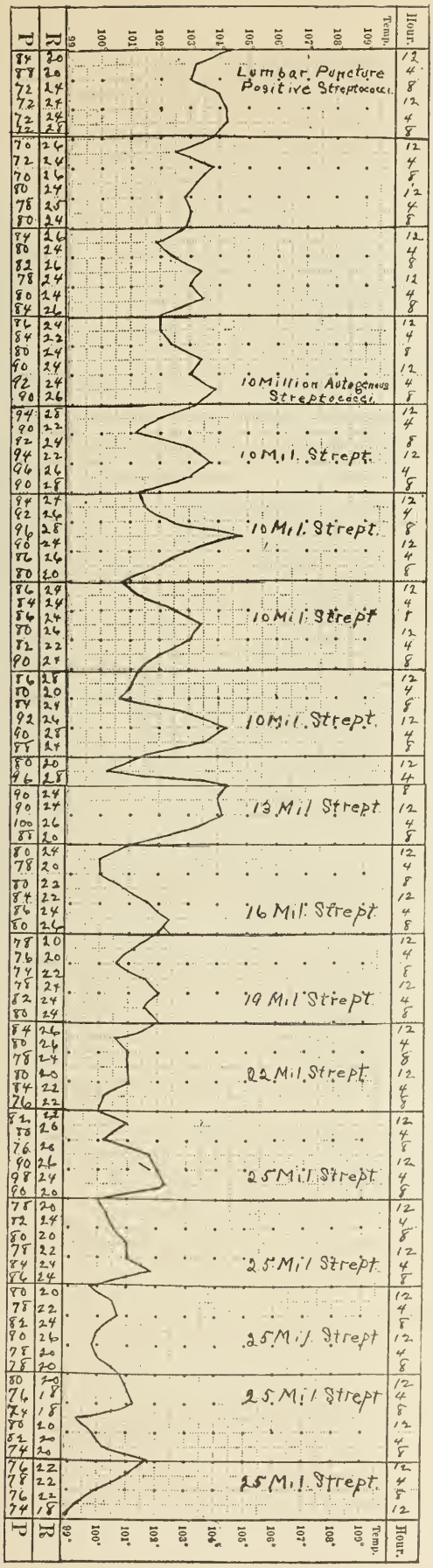
Case II.—L. B., a young woman, aged twenty-four years, had been under treatment for nasal obstruction and mucopurulent catarrh. The septum was badly deflected to the left side, especially in its posterior part; the ethmoid cells were infected, but no other sinuses involved. After some weeks' treatment it was felt that the nasal interior was sufficiently clean to warrant the necessary straightening of the septum, and on March 20, 1910, a submucous operation was done under cocaine anæsthesia, a considerable part of the bony septum as well as much of the cartilage being removed. Nothing of moment occurred during the operation, and at its conclusion the nose was packed with Bernay sponge tampons, as has been Dr. Graef's custom in such cases for some years.

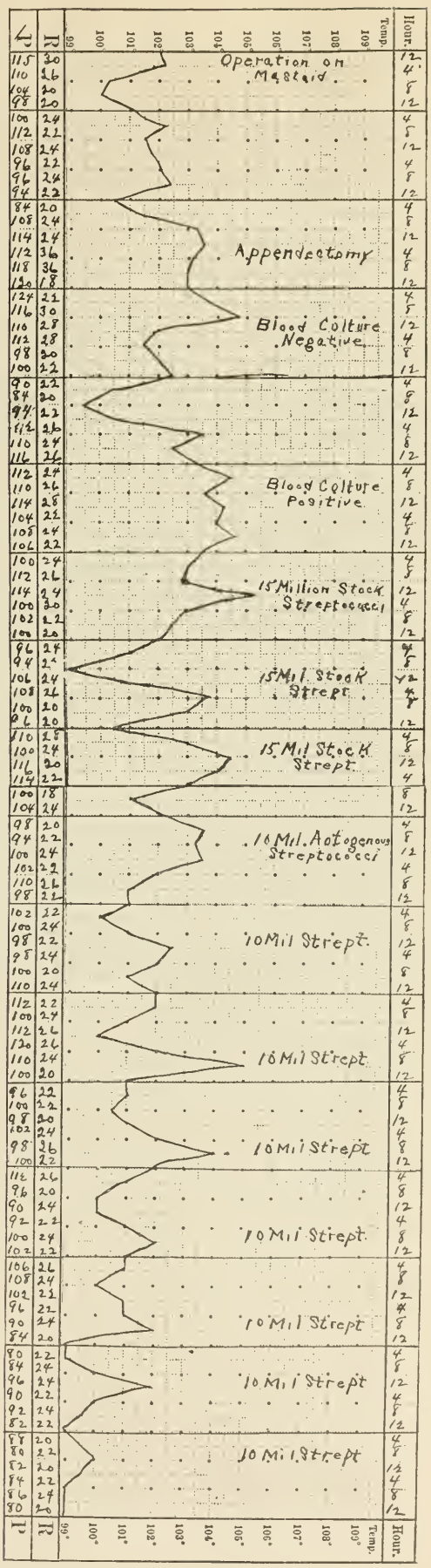
There was a slight rise of temperature next morning and some uneasiness of the stomach, the patient vomiting several times. Later in the day this disappeared and the patient sat up in bed. She slept well that night but complained of headache the next morning. All packing was removed, the nose irrigated with warm saline, and a sedative powder given. Later in the day the temperature shot up to 104° F., severe headache continued, unrelieved by sedatives; the patient complained much of severe pain in the spine and at the nape of the neck, and later in the evening became delirious. Bromides and ergot were given as medication, nasal irrigation continued, ice cap to head, etc. Patient slept fitfully but was restless and delirious when awake. The next day the patient in quieter intervals complained of diplopia, and a marked convergent strabismus developed. The temperature remained between 103° F. and 105° F. in spite of sponges, packs, etc.; pulse, 96; respiration, 26. The severe pains in neck and along the spine persisted. With slight remissions this state lasted until March 30th, when a spinal puncture revealed the presence of streptococci in the meningeal fluid. The temperature remained high, for the most part about 104° F.; the more excitable delirium of the earlier stage was later succeeded by a muttering semicoma, with involuntary evacuations, a cyanotic tint of the skin, and a low, typhoid condition generally.

On March 27th, the fourth day of the disease, a spinal puncture was made by Dr. Wynkoop. The fluid was very cloudy, but no increase of tension was detected, and only 4 c.c. was obtained. The cell count of this showed seventy-five per cent. of polynuclear leucocytes; fifteen per cent., lymphocytes; ten per cent. endothelial cells. Stained smears showed Gram negative extracellular cocci arranged in pairs, but cultures made on the ordinary media were negative. On March 30th a second spinal puncture was made; 6 c.c. of fluid, similar to that first obtained, was drawn off, this time under noticeable tension. The same organisms were found, and from cultures on glycerin blood agar proved to be streptococci. An autogenous vaccine was made, and on April 2d, ten million organisms were given. The temperature promptly dropped from 103.3° F. to 101.1° F., the lowest point since the meningitis had developed. Ten million organisms were then given daily for five doses with increasing remissions of temperature after each. The dosage was then increased by three millions a day until the twenty-five million mark was reached. This amount was then given for five days, after which the same amount was given twice a week.

The patient was discharged, cured, thirty-eight days after admission to the hospital. In all she received seventeen doses, amounting to 323 million organisms. The nasal septum had healed without trouble and a satisfactory balancing of the nasal chambers was secured.

The charts of these patients, the essentials of which are appended, show in a striking way the helpful effect of the vaccines. In neither of these cases was an estimate of the opsonic index made,


Lumbar Puncture Positive Streptococci.
10 Million Autogenous Streptococci.
10 Mil. Strept.
10 Mil. Strept.
10 Mil. Strept.
10 Mil. Strept.
13 Mil Strept.
16 Mil. Strept.
19 Mil. Strept.
22 Mil. Strept.
25 Mil. Strept.
25 Mil. Strept.
25 Mil. Strept.
25 Mil. Strept.
Temp.
Hour.


Operation on Mastoid.
Appendectomy
Blood Culture Negative.
Blood Culture Positive.
15 Million Stock Streptococci
15 Mil. Stock Strept.
15 Mil. Stock Strept.
16 Mil. Autogenous Streptococci
10 Mil Strept.
16 Mil Strept.
10 Mil Strept.
10 Mil Strept.
10 Mil Strept.
10 Mil Strept.
Temp.
Hour.

the dosage was taken arbitrarily, and modified to suit the needs of the individual cases as shown by the clinical symptoms. The striking fall in temperature after each initial dose of vaccine, and the subsequent slow but steady improvement, as the small doses were administered daily can be easily read from the charts, but was even more impressive when studied at the bedside.

1076 Boston Road.

FURTHER COMMUNICATIONS ON MY DUODENAL TUBE.*

By M. Gross, M. D.,
New York.

Introduction.—Unless there are mechanical obstacles at the pylorus, it is possible to-day to pass beyond the pylorus and obtain the unmixed duodenal juice in each case, mostly within one hour, although in certain cases it takes a little more time to reach the duodenum.

Our chemical investigations are in full swing. Their principal object is to learn the conditions of the duodenal secretion in normal state and to draw conclusions therefrom in regard to pathology. With these objects in mind, I think it advisable to revert once more to the technique of introducing my duodenal tube.

Principle and mode of introduction.—As I have described before,[1] the principle consists in introducing a soft rubber tube, weighted by a little metal ball, which the patient is to swallow. By placing the patient on his right side, the small ball together with the tube to which it is attached, will be dragged closely to the pylorus. Arrived there, the little ball is subjected to the propulsive mechanism of the pars pylorica, under the influence of which it will rapidly pass beyond the pyloric ring. Owing to the position of the patient, lying on his right side, the pyloric part of the stomach is better filled with contents of the stomach and becomes what may be described as unfolded, thereby allowing the small ball from the first undisturbed access to the pylorus. Besides, experience has shown—and this has been confirmed by experiments made by Dr. A. Marcovics[2]—that the time of expulsion of the gastric contents may be considerably shortened by the patient assuming a position on his right side.

Motor mechanism of the stomach.—The introduction of the duodenal tube is facilitated and becomes intelligible by following the fate of the little metal ball through the cavity of the stomach, but this, again, is possible only when the motor mechanism of the stomach is fully understood. We are indebted for elucidations in this respect to the investigations of F. Hoffmeister and Schuetz,[3] and also to the more recent researches of Rieder, Holzknecht, Brauner, Groedel. According to these investigators the motor mechanism of the stomach works in three phases. As a matter of course it requires their harmonic action to ensure normal function.

Phase I.—This occurs in the fundus corporis, the so called principal stomach, in the shape of rapidly succeeding, more or less flat, undulatory motions of a slightly progressing character, also in the shape of slight oscillations of contraction around the gastric contents (peristole), which at the same time maintain a certain tonus of the stomach walls. At the lowest point of the great curvature only the contractions deepen considerably and form at a point about four fingers' breadth from the pylorus a constriction which gradually deepens; at the same time meeting a similar constriction of the lesser curvature with the result of a complete temporary occlusion of the lumen at this point of the stomach. This is the so called sphincter antri pylori. In this main part of the stomach—the shaking apparatus—the chemical impregnation of the food takes place, also a kind of sorting of the chyme by means of the sphincter antri pylori.

Phase II.—The second phase occurs in the antrum pylori, the so called accessory stomach. Here the contractions are of longer duration and are of a tonic character; there is also a leechlike shortening in the longitudinal direction of this part. In this way the fluidified food which cannot escape behind through the now closed sphincter antri pylori, is pushed on through the now open pylorus into the duodenum. The antrum, owing to its vigorous muscular power, also serves as a kind of squashing apparatus.

Phase III.—In the third phase this powerful contraction in the antrum pylori slowly subsides. The food morsels which have not been propelled forward, float mechanically back, with a now relaxed sphincter antri pylori, into the stomach cavity. This phase, especially when the chyme is thick and mixed with solid food remnants, often ends with an antiperistaltic motion which, the pylorus now being closed, throws the large food remnants vigorously back toward the cavity of the stomach. This is the only antiperistaltic motion to be observed in the stomach—that is, the normal stomach—because in cases of pyloric stenosis antiperistalsis is the rule.

It is possible, therefore, that in some cases the small ball is kept back, even if only temporarily, in the antrum pylori, or, if it can escape sideways, it may be vigorously pushed against the pylorus or the sphincter antri, or pushed back toward the stomach by reverse contractions. By the patient assuming a position on the right side, however, there will always be a repeated falling back of the ball to its original position and thus a final accomplishment of its passage through the pylorus.

Position of the stomach.—The rapidity and certainty with which the small ball will reach the duodenum also depends upon the position of the pylorus. In a so called "horn shaped" stomach, where the pylorus is situated at the lowest part of the organ and can be identified with its caudal pole, the ball will reach the pylorus more rapidly and pass through it more easily and safely, than in a so called "fish hook" stomach, where the pylorus is situated higher than the lowest point of the stomach.

Atonic and empty stomach.—Atonic stomach walls facilitate the introduction of the tube. Frequently it is possible to examine even in fasting condition, the more so as the pylorus has been

*Read before the German Medical Society, May 2, 1910.

[1] *New York Medical Journal*, January 8, 1910; *Journal of the American Medical Association*, April 23, 1910.

[2] *Medizinische Klinik*, 1910, No. 14.

[3] *Archiv für experimentelle Pathologie*, xx.

found to be open when the stomach is empty. In all these cases the walls of the stomach are not quite contiguous, and there is always a certain lumen. In pyloric insufficiency the tube can also be introduced very easily.

From all the facts thus far stated it can be seen why even with correct technical manipulation the time for introducing the tube is subject to considerable variation.

Reaction.—As to the reaction of the aspirated duodenal contents, there is no such thing as a sudden change of the gastric acids to alkalinity of the duodenum (the examination, however, cannot be considered successful, unless finally there is alkaline reaction of the duodenal juice), for the reason that the first half of the pars horizontalis superior duodeni is flooded with large quantities of the gastric contents; here the otherwise characteristically yellow contents of the duodenum still show distinct acid reaction, while in the other parts of the duodenum, which are rapidly traversed, and by only small quantities of the gastric contents at that, there is a distinct alkaline reaction, interrupted, however, by short acid waves, but which become thoroughly alkaline lower down. It is essential, however, that there be a liberal flow of bile, since it is this which chiefly neutralizes the chyme.

Squirting sound of the pylorus.—As is well known, the so called "squirting sound" of the pylorus, produced at the moment of its opening, can in some cases be perceived even under normal conditions. In our case, however, where the ball has passed through the pylorus and the tube lies in the pyloric ring, this sound can nearly always be distinctly heard, it being intensified by the resonance of the tube. It is an interesting and quite plausible fact that, as a rule, there is simultaneously with the opening of the pylorus, or a little later, a brisk outgoing current of the clear duodenal fluid.

Aspiration.—If there is "dry aspiration" from the first on introduction of the tube, so that there is absolutely no fluid to be aspirated, the experiment must be at once repeated, because only an "existing current" will show that the tube is lying and running in the proper direction. In case of "dry aspiration" the tube should, of course, only be drawn back to 45 cm.

Conclusion.—This duodenal tube which I have devised, is unquestionably destined to elucidate in the near future definite and important questions as to the function of this part of the intestinal tract, elucidations which above all may be utilized for diagnostic and perhaps also for therapeutic purposes.

616 Madison Avenue.

CONGLUTINATIO ORIFICII UTERI EXTERNI.

By Miles F. Porter, A. M., M. D.,
Fort Wayne, Indiana,
Surgeon to Hope Hospital; Professor of Surgery in Indiana University School of Medicine.

Case: On the morning of April 20, 1910, I was called by Dr. Carrie Banning to see Mrs. G. who was in labor with her first child. I was told by Dr. Banning that the pains were good but that there was a "membrane in front of the head."

The following history was obtained: Age, thirty-three years. Married, fourteen years, never pregnant before. Last menstrual period nine months ago. Menses came when she was twelve years old. Periods came regularly but were quite painful, especially so for the first ten years. Six years ago she had an attack of "peritonitis" which kept her in bed one week. The first labor pains came at 12.30 a. m. on the 19th.

Dr. Banning was called six hours later and twenty-four hours after Dr. Banning was called I saw the patient. She was having strong, regular pains and was complaining loudly and begging for relief. On examination I found a woman small in stature (5 feet), medium complexion, well nourished, and well proportioned. The pulse was rapid and rather poor in volume, the vagina hot and not well lubricated. The posterior fontanelle could be felt, with the finger in the vagina, to the left and in front, corroborating the diagnosis of Dr. Banning as to the position, left occipitoanterior. With each pain the head would enter the pelvis only to recede when the pain ceased. The pelvis seemed ample, and the child of normal size. There was some discharge of meconium. There was imposed between the finger and the child's head what seemed to be a thick membrane in which were eight or ten depressions all of which conveyed to the finger the same impression as to size and depth. Each seemed to be of about the size of two pinheads and about from one eighth to one sixteenth of an inch in depth.

After this examination the patient was moved at once to Hope Hospital where, after the usual preparation, she was again examined under ether anæsthesia, when my findings were corroborated, and in addition a visual inspection with the aid of two broad retractors was made.

The depressions, noted before, could be seen. They occupied the upper right aspect of the field, all were of the same size, and all but one appeared like follicles floored with mucous membrane of a little deeper color than that surrounding the depressions. The one which was situated below and to the left of the others, and more nearly in the centre of the field, did not have this floor. While this inspection was being made a uterine contraction came on, and a fine stream of meconium was seen to issue from this opening. When the pain ceased the field was wiped clean, when it was seen that from this opening there was protruding three or four dark hairs.

A small Péan forceps was introduced into this opening and opened; this resulted, not in a dilatation, but a tear, about one half inch long, backward. Through this enlarged opening the scalp could be seen and with the finger the diagnosis as to the position was verified. With scissors the margin of the opening was snipped in several places, and dilatation rapidly accomplished with the fingers, the forceps applied, and delivery accomplished. The time elapsing from the commencement of the dilatation until the delivery of the child was less than 50 minutes. There was a very superficial tear of the vagina posteriorly just above but not extending through the fourchette. The placenta was delivered with the hand in the uterus and at the same time it was ascertained that there was no serious injury to the womb. After a hot intrauterine douche the woman was put to bed in very good condition, and up to the present writing (eight days after confinement) had no untoward symptoms.

This case is designated as one of conglutination of the external os rather than as one of atresia of the external os for the reason that it better describes the condition, though neither term conveys an exact idea of the condition. What was present here was a congenitally small external os, as proved by the pain during menstruation and the fourteen years of sterility; and an os which remained small in spite of menstruation and labor, because of conglutination. Had the os been normal in every particular save for size, dilatation would have resulted from labor. In this case no dilatation occurred as a result of prolonged and strong uterine contractions, and, as noted before, when an effort was made to dilate it with forceps a tear was produced. There is no reason for believing that there ever existed in this case a complete atresia. On the contrary, there is positive proof that the os was perforate from the age of twelve. The relative sterility and painful

menstruation leave little doubt that the os was always abnormally small.

It is generally thought that atresia of the external os in a pregnant woman is acquired after impregnation. Whether in the case reported the pathological condition which prevented the os from dilating came on after impregnation or whether it antedated the pregnancy is to my mind an open question.

What the depressions, above noted, were, I cannot say positively, but they were probably the mucous follicles of the endocervical mucous membrane, which latter was everted by the uterine contractions.

The chief danger in these cases is rupture of the uterus. In a case reported by Jentzen[1] the cervix was torn off. Early recognition of the condition followed by prompt dilatation will prevent these accidents. Hæmorrhage from tearing or cutting the cervix may necessitate stitching or firm gauze packing.

207 West Wayne Street.

ABUSIVE USE OF FORCEPS IN PRIMIPARÆ.

By Alexander Isaacson, M. D.,
New York.

It is a common fact that too often a forceps is applied when nonindicated, particularly among busy general practitioners, and at times by ardent and ambitious embryo physicians who would stop short at nothing to satisfy their greed at performing this operation.

Of course, there are positive indications for the use of forceps, both in primiparæ and multiparæ, such as complete inertia, and for other reasons when a natural birth could not take place, as in various forms of contracted pelvis; and where there has been a delay in the advance of the head over a certain period, approximately two hours when the head is above the perinæum, and one hour when the head is upon the perinæum; in the latter cases a gain in time is essential.

Putting aside the cases where the use of the forceps is truly indicated, we come to the many cases in which haste and greed only are the paramount issues, and the forceps is applied to the detriment of the patient. A woman in labor is very readily influenced and convinced to allow the use of the forceps; particularly primiparæ, who are so impatient as to concede almost anything in order that their pains may be lessened; it is also a very common idea among the laity that primiparæ should be delivered with instruments, and many physicians will take advantage under these circumstances.

I believe it is very unfair and unjust, nonprofessional, for a physician to apply the forceps simply because he is too busy and cannot wait for the natural forces to act or because he is envious of his brother physician and desires to lead in the percentage of forceps deliveries performed. A forceps delivery, even in the hands of the most competent, is, nevertheless, an operation which should not be taken too lightly; it surely does not add to the safety of the mother or child; and to subject a patient to this ordeal for selfish reasons only, as it is often done, constitutes, in my mind, a criminal act.

It is not necessary to dwell upon the advantages of natural births, which are self evident, when we look upon the contrasting manifold disadvantages of forceps manipulations, 1, necessitating, as it does, the use of an anæsthetic, most commonly chloroform, with its ordinary dangers; and it has been recently shown that chloroform always has a deleterious effect upon the liver; and there are cases on record of latent chloroform toxæmias; 2, manipulations increase the chances of infection; 3, the greater possibility of lacerations; and, 4, lastly but not of least importance, the dangers to the child in forceps application. With these great disadvantages staring into our faces, I think the profession should limit the use of forceps only to cases indicated, and not merely use it at random or to please one's self.

With conscientious consideration for the patients, our percentage of natural births in primiparæ would be greatly increased, if the forceps was applied only where absolutely necessary.

1477 Washington Avenue.

[1]Hirst, *Textbook of Obstetrics*, p. 520.

Our Readers' Discussions.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

XCIX.—How do you treat gonorrhœa in the male? (Closed June 15, 1910.)

C.—How do you treat œdema of the lungs? (Answers due not later than July 15. 1910.)

CI.—How do you treat chronic nasal catarrh? (Answers due not later than August 15, 1910.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED) *that the answers be short; if practicable no one answer to contain more than six hundred words.*

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The prize of $25 for the best essay submitted in answer to question XCVIII was awarded to Dr. Michael Schuman, of New York, whose article appeared on page 1338 of volume XCI.

PRIZE QUESTION XCVIII.

THE PREVENTION OF THE SPREAD OF SCARLET FEVER.

(Continued from page 30.)

Dr. Maurice A. Walker, of Dillon, Montana, says:

Absolute isolation of scarlatina is the only known preventive of the spread of the infection. The disease is probably communicable from the beginning of throat or skin symptoms, but much more so during the stage of desquamation when the contagium is no doubt carried in the epidermal scales.

In this paper it is understood that all scarlatina

cases are by law obliged to be reported to the health authorities.

When it is known that there is any source of scarlet fever infection in the neighborhood, all cases of sore throat or of suddenly appearing nausea or convulsions without a well defined cause, occurring in persons between the ages of one and twenty years, are to be looked upon as suspicious. These should be carefully watched and kept in isolation or as nearly so as possible, until the real condition has declared itself or until one week has passed, and in the meantime should be treated as if they were infectious. A mild antiseptic spray or gargle should be used in the throats of all such cases. Allow no one to kiss such a person, nor use his drinking vessels without first subjecting them to at least ten minutes' boiling, nor handle his cast off clothing. The patient with sore throat must use handkerchiefs or cloths for that purpose which are to have at least an hour's boiling before being used by any one else.

It is to be remembered that the mild cases are just as liable to spread the disease as are the severer ones, in fact more so, because some of them are not recognized, and in others a physician is not called, and so are not found out until they have spread the infection over the neighborhood. All reports of sore throat cases which are heard of, should be immediately investigated.

If the case proves itself to be one of scarlatina then complete isolation of the entire house should be at once instituted, every person inside remaining there during the entire period of quarantine, except that they are first disinfected in the manner provided for the final disinfection, and then only in the case of adults. All children must stay where they are.

The room or rooms selected for the patient should be sunny, well lighted and ventilated. All carpets, rugs, and hangings should be removed and disinfected with formaldehyde, as it is easier to do it now than when they have remained in the room during the whole period of the isolation. The patient must have his own dishes and vessels of all kinds that may be required. No books are to remain in the room, and none used during the infective period except such as are to be burned at its close. All cats and dogs must be kept out of the house. Absolutely nothing is to come out of the quarantined premises during the time of isolation, no dishes, milk bottles, etc., and no mail matter unless it has first been properly fumigated before sealing, by a competent person.

Discharges from the bladder and bowel should be passed into vessels containing some active germicide which does not precipitate with albumin. If the water closet is used, it must be treated after each use just the same as would other vessels used for the purpose. Cotton or cloths used about the patient must be burned, or if not, then immediately placed in an antiseptic solution enough to completely cover them, from which they can be removed to a boiler of some sort, and boiled for at least an hour before final washing.

If abscesses are opened, the discharge from them or from the ear in case of suppurative otitis is infective, and to be treated accordingly. The physician must not leave the house with instruments employed in such work until he has boiled them at least ten minutes, and he should wear rubber gloves during the work, which are also to be boiled before leaving. During the infective period, the patient's body must receive a daily bath, this to be followed by anointing the entire body with some bland anguent, such as olive oil, to help in preventing the dissemination of the scales. This is especially necessary after desquamation has begun and until it is complete.

The physician, in making his visits, must not take into the house any unnecessary articles, especially a handbag, as this is hard to disinfect. He should leave his hat and gloves outside, and at the door invest himself with a loose one piece suit which will cover him from head to feet, including both, with a drawstring or rubber cord about the face and at the wrists. When he leaves the house, after remaining as short a time as possible, he is to leave this gown at the door, outside, and after his departure the nurse or one of the family must take it inside, soak it for at least an hour in a 1 to 1,000 bichloride solution, wring it out, and hang it outside, still wet, for his next visit. In case the visits are too close together for the gown to become dry in the intervals, he must use two of them alternately. When he leaves the house, he must wash his hands and face carefully in a 1 in 4,000 bichloride solution, and dry them on a towel left outside for that purpose, and used for nothing else. If necessary he can carry his own towels.

The patient must have his own thermometer, to be destroyed when he no longer requires it.

Quarantine must be maintained for at least three weeks, and until the throat is clear, all discharge from the ears and from glandular abscesses have ceased, and all signs of desquamation, which persists longest on the palms, soles, and flexures, are gone. Most cases will require from four to six weeks of isolation before desquamation is complete.

I prefer disinfection of the person and premises as follows:—If possible, arrange that one part of the house can be shut off from the rest. Then leave in the part where the family and nurse remain facilities for bathing—a washtub will answer very well—and bichloride tablets. Place in the shut off part a complete outfit of clothing from the skin out, for every inmate, and plenty of towels which have been boiled for an hour and dried, hung about the room on lines stretched about, or on chairs, etc. Distribute bed clothing which cannot be boiled or burned in the same manner. Close off these apartments slightly from the rest of the house and from outdoors, pasting paper strips over all cracks about doors and windows. Then fumigate these rooms in the usual way with formaldehyde by the permanganate process, pouring one pint of formaldehyde (forty per cent.) over seven and one half ounces of potassium permanganate for each 1,000 cubic feet. I use candy pails for this work, as this obviates the necessity for having the large tin ones made, and they can be procured almost anywhere. Let these rooms remain closed at least six hours. At the end of that time open them from the outside if possible, and let the gas escape.

Then each of the inmates is to entirely undress, bathe the entire body carefully in a 1 in 4,000 bichloride solution, pass while still wet with it into the

fumigated part of the house, dry on the disinfected towels, and dress in the fumigated clothing. In washing, they must pay particular attention to thoroughly wetting the hairy parts of the body. The clothing which was removed is to be left in the part of the house where they undressed, and this is to then be fumigated in the same manner as was the rest. When the house cannot be so divided, the inmates must take the bichloride bath, dress immediately in boiled or new clothing which has not been inside the house, or in clothing which has been fumigated in a separate building or room, and leave the house at once while it is being fumigated. After fumigation, all bare floors and woodwork are to be scrubbed with a 1 in 1,000 bichloride solution, and the walls should be repapered where possible, or freshly calcimined.

All sheets, pillow slips, and other bed or personal clothing which will permit of it should be boiled for at least an hour. Pillows, mattresses, and quilted bed clothing may be successfully fumigated with the house, unless they have been wetted with discharges of any sort, in which case they must be burned. This must be done before the fumigation is performed, so that the person attending to the matter may not become a carrier of infection.

In case of death, the undertaker must take the same precautions as advised for the physician, the body to be immediately wrapped in a sheet wrung out of a 1 in 1,000 bichloride solution, and placed at once in the casket, only a private funeral being permitted, and none of the family allowed to attend. Where possible, I do not allow the casket to be carried into the house at all, but have the wrapped body brought outside and placed in it there, and at once taken to the cemetery.

If a school child shows the efflorescence while in school, such school should be immediately dismissed, the rooms fumigated, and the school remain closed for one week—long enough to ascertain if other children have become infected. At the end of that time all children in whose families the infection has not appeared may return to school, and sessions be resumed. If only prodromal symptoms, such as chill, vomiting, or sore throat induce the child to remain at home or to be dismissed while in session, there is no need to close the school, especially in the city, as in such cases the children are safer in school than in running about the streets, and they have generally been exposed as much as they will be by remaining. However, in the presence of any considerable number of cases in one locality, the school should be disinfected and closed as before mentioned, and for the same reason. In the presence of a severe epidemic of scarlatina in a small town or country community, all public meetings as well as school sessions should be prohibited until the epidemic is under control, and all cases located and quarantined. Children from a house which has been quarantined for scarlatina must not be allowed to attend school for a period of at least two weeks after release from quarantine.

School teachers should be instructed in the prodromal and skin symptoms of scarlatina, and that they must immediately send home any child who complains of sore throat, fever, vomiting, acutely enlarged cervical glands, or who shows any exanthem, with instruction not to return until he can present a certificate from a physician that he is not suffering from any contagious or infectious disease.

Any family having no medical attendant and failing to report cases which they have reason to believe are infectious to the proper authorities, when caught must be quarantined, and at the termination of the period of isolation, prosecuted, in the meantime having been served with notice that such action is to be taken, which will cause them to maintain careful quarantine. I find it a great help to see that the newspapers publish all such prosecutions.

In the consideration of the prevention of so communicable a diseas as scarlatina, I do not believe in half way measures, such as the isolation of the patient in one or two rooms of the house, as it is almost impossible to be sure that the regulations are carried out, but there are instances where it is not possible or advisable to quarantine the whole house. In these cases, one must select a room or rooms as much as possible isolated from the rest of the house. Some one who is to nurse the patient and attempt nothing else, must be selected from the beginning, if no regular nurse is employed. There must be facilities for boiling in the sick room. Food and supplies of any sort which come into the room, are to be set down outside the closed door, and then taken in from the inside after the departure of the messenger. When returned, the dishes and everything sent out must be first boiled, and set outside in the vessel in which the boiling was done. They are to be removed therefrom by the attendant and the container afterward taken into the room for use the next time. The nurse must remain absolutely within the sick room and not at any time come into contact with others. A sheet wrung out of formaldehyde solution should be kept hung up over the communicating doorway, which must be kept closed. If it is necessary to send out clothing for washing, which must as far as possible be avoided, this must first be boiled for at least an hour and then set out in the vessel in which it was boiled, and removed as mentioned above.

The attending physician should be even more careful than when visiting a house which is entirely quarantined, and consider the closed door of the isolated parts as the outer limit of infection, and act accordingly.

Dr. Richard H. Dieffenbach, of Newark, N. J., remarks:

As soon as the diagnosis of scarlet fever has been made the patient must be isolated. The room selected for the patient should be as far distant from all other living rooms as possible, preferably a room on the top floor of the dwelling. If this is impossible, as it often is in the present apartment houses, then a front or outside room, with plenty of air and light should be chosen. All unnecessary furniture, ornaments, pictures, draperies, rugs, etc., should be removed before placing the patient in this room. After the transfer of the patient, attention must be turned to the room just vacated. The windows and doors should be closed and all crevices filled with cotton, the bed clothing and draperies hung over chairs, and a formaldehyde generator put in action. After the fumigation the room must be kept closed

for at least twelve hours, then the bed clothing must be removed and boiled.

A nurse or an attendant must be procured who will take care of patient and under no circumstances mingle with the other members of the household or any one else. On leaving the sick room to go out for exercise, etc., the nurse or attendant should change all clothing, and scrub, with soap and water, and then wash with alcohol, or a bichloride solution (1 in 2,000) all exposed parts of the body.

The physician in attendance should make it a point to call on his scarlet fever cases after all other visits for the day have been made. He should on entering the house remove his coat and vest, and on going into the sick room put on a gown kept there for that purpose. On leaving, the gown is removed and left in the sick room; the hands are carefully scrubbed with soap and water and alcohol poured over them. The physician should remember the *marked susceptibility* of lying-in women and patients with recent wounds.

The patient and nurse must have dishes, *not* to be used by other members of the household, and these dishes must be washed separately. A good plan is to have a large vessel, containing carbolic acid solution, 1 in 20, or bichloride of mercury solution, 1 in 2,000, just outside the sick room, and place all dishes in this after using them. They can then be carried to the kitchen, placed in boiling water, and washed. If there is running water in the sick room it is a better plan for the *nurse* to wash the dishes and not remove them from the room. The above precaution applies to all dishes, vessels, etc.

The soiled bed and other clothing of the patient and nurse can, or rather, should be, placed in a similar vessel (containing a carbolic acid solution, 1 in 20, or bichloride of mercury, 1 in 2,000) outside the sick room, and after remaining in the solution for an hour, should be boiled and washed separately. Handkerchiefs for the patient are best made of gauze and burned after using.

Under no circumstance should books, furniture, draperies, rugs, pictures, flowers, or any article what so ever, be removed from the sick room to other parts. Domestic animals have been known to spread the contagion. It is also most essential that no person save the physician and the nurse enter the sick room.

As regards the other members of the family, the children should not attend school. If there are children in the household, who have not been exposed to the contagion, they should be sent away, if possible. Children who have been exposed must be watched carefully, and isolated as soon as symptoms of scarlatina appear. It must be remembered that there are very mild types of the disease. I have recently had occasion to observe a scarlet epidemic in an institution. One case of true scarlatina developed a peculiar maculopapular rash, due, probably, to a recent vaccination (cowpox). I mention this to emphasize the caution that must be exercised. The children should under no circumstance attend school. The adults of the household must exercise great caution and should be thoroughly instructed as to their responsibility in spreading the contagion.

The patient should be quarantined until all peeling has ceased, and in case of complications and sequelæ, such as rhinitis, middle ear infection, etc., until these have subsided. When the patient has been pronounced cured and ready for releasing from quarantine, two full baths should be given, the body thoroughly scrubbed, and then washed with carbolic acid solution (1 in 50) or bichloride of mercury solution (1 in 5,000). Then the patient receives clean clothing, and is now ready for the transfer. For a month, at least, the patient should sleep alone. The nurse before leaving pursues the same course of bathing, etc., as the patient. On quitting the sick room it should immediately be fumigated by means of a formalin generator, all crevices having been filled with cotton, and bed clothing, rugs, etc., hung over chairs. If preferred the floor may be sprinkled with a bichloride of mercury solution, 1 in 2,000. After thorough fumigation the room must be kept closed for at least twelve hours. Bed clothing can then be removed and boiled. As regards the mattress, if possible it should be burned. If this is impracticable it should be sprinkled with bichloride of mercury solution, 1 in 2,000. The bed should be washed with the same antiseptic solution. The room itself should not be used as a sleeping apartment for at least one month.

These suggestions are, of course, only applicable in a private house, or modern apartment. Should the case occur in a tenement house, hotel, boarding school, etc., the physician should insist on transferring the patient to an isolation hospital.

(*To be concluded.*)

Therapeutical Notes.

The Constitutional Treatment of Ulcers of the Leg.—This is the title of an article in the *Journal of the American Medical Association* for June 11, in which the author quotes from several sources, including the *New York Medical Journal* and the *Medical Record,* the last named as regards the local treatment. In reference to the constitutional and general treatment, the author of the article observes that when the physician undertakes to treat a case of ulcer of the leg, he must consider whether there is a syphilitic element in the case. This, he says, is likely to be found when the ulcers are multiple and affect both legs somewhat symmetrically. If there is reason to believe that a syphilitic taint is present constitutional treatment, with a mercurial, such as the yellow iodide of mercury in doses of one-quarter of a grain, three times a day, after meals, may be desirable. This may be followed after several weeks by potassium iodide in five to ten grain doses, well diluted with water, half an hour after each meal. Next, it must be considered what conditions exist remote from the local lesion which tend to perpetuate it. It will at once be found that most of these ulcers are associated with impaired circulation of the limb, which in many cases has resulted in a varicose condition of the superficial veins. This impairment of the circulation may be due to valvular or degenerative muscular disease of the heart, to impairment of the function of the kidneys, to tumors in the abdomen, and, by far the most frequently of all, to pregnancy. Other less frequent causes are an hereditary weak-

ness of the vessels, especially the veins, hard work, especially lifting heavy weights, constriction of the limbs by garters, and sitting with the legs crossed. The defective circulation in the leg often causes œdema of the connective or cellular tissue, and congestion of the skin, which may become a dermatitis or an eczema, accompanied by tormenting itching. Obviously the most logical and the easiest way of combating this impaired or deficient circulation in the leg is to keep the patient in bed with the affected limb elevated. But most persons who suffer with ulcer of the leg must work every day, and cannot afford the time to go to bed and wait for the ulcer to heal; hence we must try to have the ulcer heal even under unfavorable conditions.

Other resources must be utilized in order to overcome the deficient circulation. If there is constipation, with œdema and congestion of the skin, a saline laxative is likely to prove of advantage by depleting the vessels of the intestines or a vegetable laxative may be of value by stimulating the secretion of the liver and intestinal glands and so promoting elimination of toxic products which impair the circulation.

If there is valvular disease of the heart or weak action of the heart not dependent on advanced muscular degeneration, the tincture of digitalis in doses of fifteen or twenty drops, three times a day will prove useful. This drug, however, should not be continued in this dose if the pulsations of the heart are reduced below sixty a minute.

If the peripheral vessels show signs of weakness, and are dilated, the fluid extract of ergot, in doses of fifteen to thirty minims, should be given, well diluted with water, three times a day, after meals.

If there is thickening of the tissues, or if the vessels show signs of commencing arterial sclerosis, potassium or sodium iodide should be given in five grain doses, well diluted with water, half an hour after meals. After a week one dose of iodide a day is sufficient.

If the urine is scanty, or highly acid, or contains much uric acid, an alkaline diuretic should be prescribed, such as potassium citrate in thirty grain doses, in half a glass of water, after each meal.

If the ulcer is sluggish and heals slowly the solution of potassium arsenite given in five drop doses, in water, three times a day, after meals, will sometimes prove beneficial. If anæmia is present, iron must be prescribed.

REMEDIES OF RECENT INTRODUCTION.

(*Continued from page 31.*)

Cirrholysin is a compound of thiosinamine and bismuth triiodide. It is given for ankylosed joints, visceral adhesions, etc., like thiosinamine, in doses of 1/10 grain (0.0065 gramme).

Comain is a preparation of iodine for the treatment of tuberculosis. It is obtained by the action of camphor and iodoform on sesame oil; monoiodide and diiodide of camphor are formed, which enter into combination with the fatty acids of tthe oil.

Cotargent is the name of a preparation of colloidal silver.

Crotalin is the name applied to a dried and evaporated venom of the rattlesnake. Injected, dissolved in water and glycerin, the dose is 0.0006 gramme. It is recommended for the treatment of pulmonary tuberculosis, lung affections, asthma, etc., and also for allaying pain of nervous origin.

Deba is one of the protected names for diethylbarbituric acid.

Dedasol is put up in tablet form and is said to represent part for part the active principles of digitalis leaf. Each tablet contains the equivalent of 1½ grains of the leaf.

Dianol is the trade name of glycerin esters of lactic acid employed in nose and throat practice. It is marketed in three forms—dianol I, with 54.8 per cent. of lactic acid; dianol II, containing 76.3 per cent. of the acid; and dianol III with 87.7 per cent. of the acid.

Diaphant, a mixture of cocoa, sugar of milk, salep and finely powdered lodestone, is used in x ray work instead of bismuth. For an examination of the stomach 150 to 200 grammes are mixed with 300 grammes of water, and is swallowed by the patient.

Diazellose is the name of a hemicellulose obtained from agar-agar. It is a light yellow powder, readily soluble in water, to form a solution smelling like malt and having a similar taste. In doses of from 25 to 50 grammes daily, it is used as a laxative.

Endotin is said to be pure tuberculin.

Ergothionine is the name of a new base isolated from ergot by C. Tanret. It forms crystalline scales soluble in eight parts of water. It does not appear to have any marked physiological properties. The base is peculiar in that it contains an atom of sulphur in its molecule.

Ergotoxine (see Ernutin).

Ernutin is a solution of ergotoxine phosphate (the alkaloid to which ergot owes its ecbolic properties). Marketed in hypodermic tabloids of 1/100 grain, and in ampoules; also used in combination with strychnine sulphate or with morphine sulphate by the mouth.

Estoral is the menthol ester of boric acid.

Eucapren is a solution of suprarenin (1 in 5,000), containing 1 per cent. of betaeucaine lactate. It finds employment as a local anæsthetic.

Eulatin is an antipyrin compound of parabromobenzoic acid. A white, odorless, slightly acid tasting powder. Used in whooping cough in doses of from 0.1 to 0.5 gramme, three to four times daily.

Eumictin is the name given to capsules containing santalol, salol, and uritropine. They are intended for use in the treatment of gonorrhœa.

Euresol is resorcin monoacetate, occurring as a viscid, reddish yellow, pleasant aromatic oil; soluble in alcohol.

Fenchyval is fenchylisovalerate, an almost colorless liquid with a slight valerian odor; specific gravity, 0.945 at 155° C., which has been introduced as a remedy for hysteria and similar affections.

Feolathan, ferroammonium lactate, occurs as a dark brown mass with a green fluorescence. It contains 7 per cent. of iron and is very hygroscopic. Marketed in the form of pills, 100 of which contain 2½ drachms of feolathan.

(*To be continued.*)

NEW YORK MEDICAL JOURNAL
INCORPORATING THE
Philadelphia Medical Journal
and The Medical News.
A Weekly Review of Medicine.

Edited by
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Address all business communications to
A. R. ELLIOTT PUBLISHING COMPANY,
Publishers.
66 West Broadway, New York.
Cable Address: Mediour, New York.

SUBSCRIPTION PRICE:

Under Domestic Postage Rates, $5; under Foreign Postage Rate, $7; single copies, fifteen cents.

Remittances should be made by New York Exchange or post office or express money order, payable to the A. R. Elliott Publishing Co., or by registered mail, as the publishers are not responsible for money sent by unregistered mail.

Entered at the Post Office at New York and admitted for transportation through the mail as second class matter.

NEW YORK, SATURDAY, JULY 9, 1910.

GASTROENTEROSTOMY.

Gastroenterostomy is employed for the creation of a new and sufficient passage for the stomach contents in cases of pyloric stricture or atony of the stomach muscles resulting in gastric stasis. Performed under these conditions, the operation has given satisfactory results in the majority of cases. Of recent years it has been tried in other gastric affections without stenosis and with little or no stagnation, and here, besides successful outcomes, there have been failures which have given rise to a suspicion that gastroenterostomy does not always result in a complete and efficient drainage of the stomach. Cannon and Blake, in 1905, raised this question after having observed by radioscopy in cats that had been subjected to gastroenterostomy that the stomach contents passed by way of the pylorus and not by the anastomosis, even when the pylorus had been constricted by ligature before the operation. Two years later, Legett and Maray repeated these experiments on dogs, and, by different procedures, they came to the same conclusion, namely, that the stomach continued to expel its contents by the pylorus.

These results would appear to annihilate the indications for gastroenterostomy, so that Pers, of Copenhagen, undertook a series of radioscopic examinations of patients who had been submitted to this operation (*Ugeskrift for Laeger*, 1909, No. 39). In collaboration with Dr. Fischer, of the Röntgen Institute of Copenhagen, Pers was able to examine forty subjects upon whom he had performed gastroenterostomy for benign affections from one to eighteen months previously. Immediately after the beginning of a meal containing ten per cent. of bismuth carbonate, radioscopy was done and repeated every five to fifteen minutes for an hour or two. In normal subjects the stomach began to empty its contents a few minutes after they had reached the stomach, and on the radioscopic screen the shadow of the ingesta was seen to spread from the pylorus to the right of the umbilicus, downward, which corresponds to the upper part of the duodenum. Farther down, the shadow was difficult to see on account of the dilution produced by the addition of the intestinal juice. The shape and size of the stomach change very slowly, it is only after one or two hours that any appreciable difference can be noticed, and the organ is only completely emptied from four to five hours after the meal has been taken. Peristaltic movements are easily seen, especially in the pyloric portion.

Of the forty cases of gastroenterostomy, in thirty-eight Pers was able to demonstrate that the contents of the stomach passed from the organ into the intestine much more rapidly than in normal subjects and took place only by way of the anastomosis opening. In one case there was a question whether or not a small portion of the contents passed through the pylorus, and in only one case was it impossible to ascertain whether it was through the pylorus or the anastomosis. In the thirty-eight cases the shadow of the bismuth mixture was always seen on the left side of the abdomen, the pictures being made at very short intervals, and the shadows of the mixture in the stomach and of that in the intestine were joined by a narrow connection corresponding to the anastomosis opening and situated at the left portion of the greater curve of the stomach, while the pyloric portion was not seen or was without any relationship to that part of the mixture which had already entered the intestine. There was a very great difference between the shapes and sizes shown by the stomachs, and the rapidity with which the organs emptied themselves varied very greatly.

In fifteen cases the stomach began to empty itself from ten to fifteen minutes after the meal and was completely empty in an hour and a half. In fifteen other cases the passage of ingesta began immediately after the meal and was completed within twenty to fifty minutes. In eight cases the mixture immediately after deglutition was seen to continue its onward progress through the artificial opening, and the stomach was empty within from ten t twenty-five minutes. In one case the greater part of the mixture was seen to pass by the anastomosis and, besides, there was observed a very sligh shadow corresponding to the upper part of the duodenum. The passage of the mixture lasted for

three quarters of an hour. One case differed from all the others in that the stomach was emptied very slowly, in from four to five hours. The passage of the mixture was seen to the right of the umbilicus but a little to the left of the ordinary position of the pylorus, so that it was impossible to say whether or not it was a slightly strictured anastomosis situated very near the pylorus or the pylorus itself which carried on the function. This patient had had dyspeptic symptoms for eighteen months after the operation, and often the pain was very severe. In the majority of cases only very slight peristaltic movements of the stomach could be seen, and the mixture was visible for quite a long time in the intestine if its dilution by the intestinal juice was less pronounced than in normal subjects. The difference between the functional activity after gastroenterostomy and of the normal stomach is, consequently, very evident.

In the thirty-eight cases in which the stomach emptied itself only by the anastomosis, the operative indications were cicatricial stenosis in seventeen, spasmodic stenosis from ulcer in sixteen, ulcer of the duodenum in two, ulcer of the small curve, ulcer of the pylorus, and bilocular stomach and gastroptosis, of each, in one, from which it would appear that the condition of the pylorus has no influence on the route taken by the contents of the stomach or the rapidity with which evacuation takes place. It would seem only logical to conclude that by gastroenterostomy the stomach almost always empties itself through the new opening whether the pylorus is permeable and the motility of the stomach normal or not. In the majority of cases after gastroenterostomy the stomach empties itself so quickly that this operation may be considered as providing real drainage of the stomach.

THE TALMA OPERATION.

Dr. B. Credé (*Berliner klinische Wochenschrift*, May 2d) has performed the Talma operation five times and has collected about 120 cases. A permanent cure has resulted in only twenty cases, although temporary cure has been alleged for about forty. Credé emphasizes the necessity of securing an ample area of union between the omentum and the parietal peritonæum, by making a raw surface as large as the hand, loosening the parietal peritonæum, and suturing carefully. By this procedure he has effected a cure of six months' duration in a case previously requiring frequent tapping and yielding as much as eleven quarts at a time. The term *cure* is used in a less absolute sense in German than in English, and, in connection with the Talma operation for ascites, may be considered to mean the failure of ascites to reappear for a reasonable length of time, although six months is rather an inadequate period.

Credé very properly holds that the Talma operation should be limited to ascites due to portal obstruction, although he cites two cures, one in malarial splenomegaly, the other in Banti's disease, with the implication that they do not belong to this class. But the pathology of these conditions is not clearly established, especially with reference to the primary occurrence of the splenic lesion and to its supposed independence of hepatic disease. While we may imagine disease of the spleen causing some serous exudation or even transudation, it is scarcely conceivable that marked ascites can occur without some pretty direct involvement of the main portal current. In a malarial condition it is very unlikely that the relief can be ascribed entirely to the mechanical effects of the operation.

Our purpose, however, is not so much to condemn the Talma operation as to use it as a text—for which gastroenterostomy would serve as well—to point out the necessity of basing therapeutic procedures on a very careful and broad study of physiology. The basic idea of the Talma operation is that, by affording an outlet for an obstructed portal current by way of the veins of the abdominal wall, the increased venous tension to which ascites is due may be obviated. The artificially induced anastomoses between the portal and the systemic venous circulation are obviously, at the beginning, by mere capillary vessels, covering an area corresponding to a very small peritoneal surface. The great omentum, through which the anastomosis is accomplished, is an organ of no active physiological function, and its vessels are small in comparison with those of the viscera tributary to the portal trunk. The right gastroepiploic vein is a small affluent of the superior mesenteric, the left of the splenic. There are, of course, quite free anastomoses with various portal tributaries, especially those of the middle colon, but, whether judged by the anatomy of the veins or the relative size of the arteries sending blood into the respective parts of the portal area or the regulation of circulation conformably to physiological function, the great omentum does not appear to be anything more than a backstairs route for the portal current. One fact may be of significance, though, we are not sure whether in a favorable or unfavorable way; the portal system of veins is entirely valveless.

It must not be supposed that the portal system is wholly independent. The free anastomosis of the tiers of hæmorrhoidal veins and the possible current through systemic veins directly into the vena cava, the occasional development of a caput Medusæ in ascitic cases, and the various other marginal anastomoses with the systemic veins are not much

more indirect than the artificial Talma route, and, except the caput Medusæ, they exist from the beginning and consist of anastomoses by means of macroscopic though small veins, instead of by channels which must be formed *de novo,* such as capillaries. Such development is an interesting microscopical study, but, as furnishing an appreciable relief of undue portal tension, it must be considered as an expression of surgical good will quite in line with the little boy's offer of assistance to the firemen in putting out a large fire.

So much for the mechanical aspects of the problem. But, even with regard to the circulatory obstruction and the ascites, modern researches tend to show that the former is not entirely a partial tying off of portal branches by newly formed connective tissue in the liver, and that the latter is not merely the leaking of a porous hose because of resistance at the nozzle.

Paradoxical as it may seem, the fact remains that success with the Talma opération is measurably possible, because the operation inevitably fails. That is to say, if the operation really did allow any considerable proportion of the portal blood to pass around the liver, it would necessarily shorten life conspicuously. Imagine a man, dissatisfied with the slow action of a filter in treating highly contaminated and turbid water, connecting the outlet with the inlet tube by a short circuiting tube. This is the principle of the Talma operation, and not only in a metaphorical but in a quite literal sense when we bear in mind the experimentally demonstrated action of the liver in removing bacteria and their toxines from the blood.

THE JEFFRIES-JOHNSON ENCOUNTER.

The prize fight which took place in Reno last Monday, between a white man and a negro, is probably of interest to many people on various accounts which do not concern the medical profession, and upon which, therefore, we do not feel called upon to remark. There is one aspect of the matter, however, which may be held to have a bearing upon anthropometry, for presumably there are persons who will infer from Johnson's triumph that the negro race is physically superior to the whites.

Such an inference, we think, would be erroneous, though we are well aware of the occasional superb muscular development of negroes. We are inclined to think that, as a rule, the blacks are not so muscular as the whites. Besides that, muscular development is not the sole index of physical vigor and apparently not even the most important one. Athletic men are not generally among those who are most likely to reach advanced age; indeed, they seem to be rather lacking in the power to resist disease, and, in particular, it is not very uncommon for a prize fighter to die of tuberculous disease at a comparatively early age.

Not only are athletic persons apt to be defective in the vital power that in the long run tends to prolong life, but the negro, irrespective of his muscular development, falls a comparatively easy victim to an attack of infectious disease. There are, it is true, remarkable instances of longevity among the blacks, but it is noticeable that in general they are prone to fall into decrepitude when they reach middle age, and it is almost proverbial that the aged negro is a totterer. It is the common impression, one which we suppose to be well founded, that our negro population, if not actually diminishing, fails to increase in any such rate as the whites. To be sure, they are not so reinforced by immigration as the whites are, but this fact does not seem sufficient to account for their failure to keep pace with the white population in numbers.

The Jeffries-Johnson fight, then, cannot stand as a proof of the general physical superiority of the negro, and it could not so stand even if Jeffries's evident deterioration had not apparently been such a prominent element in bringing about his defeat. It would be unprofitable to speculate upon the probable outcome of the encounter if Jeffries had preserved or regained his former dash, for such contests between individuals cannot be accepted as settling any such question as that of the physical superiority of one race to another.

THE QUIET FOURTH.

That which we had hardly dared to hope for has occurred in New York—a Fourth of July free from the immemorial din. Of course there has been a corresponding freedom from injuries due to explosives and from the tetanus which is such a frequent result of wounds inflicted with the toy pistol. Doubtless the usual mortality has been doubly reduced, for it may well be questioned if as many persons have not in the past been hastened to the grave by the mere noise itself, coupled with conflagrations and the dread of them, as by the traumatisms and infections due to explosives.

What we have said is founded on the way in which the day passed off in New York, but, in view of the widespread efforts for a "sane and safe" Fourth, we cannot doubt that the old time horrors of the anniversary have been decidedly abated in the greater part of the country. Now that the traditional evils of the occasion have for once been done away with, we may hope that there will never be a relapse, but that Independence Day will hereafter be celebrated in a manner not incompatible with the safety and comfort of the citizen and with our pretensions as a civilized community.

News Items.

Changes of Address.—Dr. J. D. Brittingham, to 4010 Chestnut Street, Philadelphia.

Dr. Joseph H. Andries, to 75 Adelaide Street, Detroit.

Dr. Francis L. Donlon, to 470 East 138th Street, New York.

The Harvard Medical Alumni Association has donated $2,000 to the college, for the benefit of alumni instruction.

The Rappahannock Valley Medical Society is the name adopted by the local medical society of Fredericksburg, Va. At a meeting held on June 20th many changes in the by-laws were adopted.

The Maine Medical School held its annual commencement exercises at Bowdoin College, Brunswick, on Thursday, June 23d. The degree of doctor of medicine was conferred upon twenty graduates.

Oklahoma No Longer Reciprocates.—Announcement is made by the Oklahoma State Board of Medical Examiners that after July 12, 1910, all persons desiring to enter into the practice of medicine in that State must pass the examination of the Oklahoma board.

The Bristol, Mass., South District Medical Society held its annual meeting recently in Fall River, and elected the following officers for the ensuing year: President, Dr. A. W. Buck, of Fall River; vice-president, Dr. H. D. Prescott, of New Bedford; secretary and treasurer, Dr. A. J. Abbe, of Fall River.

New Nurses' Home for Roosevelt Hospital.—Plans have been filed for the erection of a six story building, on the Fifty-ninth Street side of the block east of Tenth Avenue, for a Nurses' Home for Roosevelt Hospital. The building will contain one hundred and twenty-eight rooms, and the estimated cost is $120,000.

The Medical Society of the County of Otsego, N. Y., held its semiannual meeting in Cooperstown, N. Y., on June 16th, and elected the following officers for the ensuing year: President, Dr. John H. Moon, of Cooperstown; vice-president, Dr. D. H. Davis, of East Worcester; secretary, Dr. J. C. Smith, of Oneonta; treasurer, Dr. Frank L. Winsor, of Laurens.

The Ex-Residents' Society, of Philadelphia, which is composed of former resident physicians of the Samaritan Hospital, held its first annual meeting on Wednesday, June 29th, at the home of Dr. William McKeage. Twenty-five of the thirty members of the organization were present, and an enjoyable evening was spent. At the close of the meeting a banquet was served.

Faculty Changes at the Baltimore Medical College.—Dr. David Streett, dean of the college, announces the following additions to the medical faculty: Dr. T. B. Marden, elected professor of biology, including histology, embryology, and zoology; Dr. E. L. Whitney, reelected professor of physiological chemistry and pharmacology; Dr. H. Raymond Spencer, appointed demonstrator in physiology; Dr. Reginald D. West, appointed demonstrator in anatomy.

The New Operating Room of the Syracuse Free Dispensary was formally opened on Thursday, June 30th. The first operation, which was the amputation of a man's crushed finger, was performed by Dr. John Van Duyn, a member of the dispensary's original staff. He was assisted by Dr. E. S. Van Duyn, Dr. Frederick B. Flaherty, Dr. A. B. Miller, and Dr. C. H. Benson. This newly established operating room, which was presented to the dispensary by one of the trustees, will be used for minor operations only, and it is expected it will relieve the hospitals of many cases.

A Cancer Hospital to be Established in Philadelphia.—A hospital to be devoted exclusively to cancer and nervous diseases is to be established in Philadelphia in the near future by the Quarterly Meeting House for Aged and Infirm Friends. The money needed for the undertaking became available with the decision of Justice Brown of the supreme court, upholding a decision of the orphan's court in the will of Anna T. Jeanes, who died in Philadelphia in September, 1907, leaving her millions to charity. The will was contested by relatives. The bequest for the cancer hospital amounts to $200,000 and the residue of the estate, which includes some valuable coal lands, the value of which is estimated at over a million dollars, a sum adequate for the purpose.

The Howard T. Ricketts Prize.—In memory of the late Dr. Howard T. Ricketts, of the University of Chicago, who recently died in Mexico of typhus fever while investigating the disease, there has been established in Rush Medical College a prize of the value of $25 to be awarded annually to the student presenting the best thesis embodying the results of original investigation on some topic relating to dermatology. The prize will be known as the Howard T. Ricketts Prize.

Personal.—Dr. D. H. Dolley, of the University of North Carolina, has been appointed professor of pathology and bacteriology at the University of Missouri.

Dr. T. Wesley Mills, professor of physiology at McGill University for twenty-five years, has retired from the faculty on account of ill health.

Dr. John M. Faison, of Warsaw, Dublin County, N. C., has been nominated for Congress by the Democratic Convention of the Third North Carolina District.

An Institution for Scientific Investigation to be Established in Chicago.—Announcement is made of the establishment in Chicago of the Otto S. A. Sprague Memorial Institute for the scientific investigation of the causes of disease, with an immediate endowment of $1,000,000. The trustees say there are prospects for increasing the endowment to several million dollars. Provision for establishing the institute was made in the will of O. S. A. Sprague, who died in February, 1909. A charter for the new institute has been granted by the State, and it is said that the work will be begun in the fall.

The Wisconsin College of Physicians and Surgeons held its annual business meeting in Milwaukee on Monday, June 20th, and reelected Dr. Thomas C. Phillips dean of the faculty. Officers to serve for the ensuing year, and members of the board of directors, were also elected. Several changes in the faculty were announced, the principal being the election of Dr. J. D. Madison as head of the department of internal medicine; Dr. J. H. Sure as head of the department of obstetrics; Dr. C. A. Kreutzer, head of the department of gynæcology, and Dr. Bussewitz, as professor of physiology.

Changes in the Faculty of the Philadelphia Polyclinic.—At a recent meeting of the board of trustees of the Philadelphia Polyclinic, the following nominations to the faculty were made: Dr. Theodore A. Erck, associate in gynæcology; Dr. Thomas A. Hearst, associate in diseases of the throat and nose; Dr. Rose Hirschler, associate in diseases of the skin; Dr. Eugene Lindauer, associate in clinical medicine; Dr. C. C. Biedert, associate in diseases of the throat and nose; Dr. William Oakley Hermance, associate in diseases of the rectum; Dr. Ralph Butler, associate in diseases of the ear; Dr. Arthur Newlin, associate in diseases of children.

Honorary Degrees.—The degree of doctor of laws was conferred upon Dr. William H. Welch, of the Johns Hopkins University, by Princeton University, at the recent commencement exercises of the university. The degree of doctor of science was conferred on Dr. T. B. Osborne, chemist at the Connecticut Agricultural Experiment Station, by Yale University, at the annual commencement, held recently. Hobart College conferred the degree of doctor of science on Dr. Warren P. Lombard, professor of physiology at the University of Michigan, and Dr. Henry Rutgers Marshall, of New York. Dartmouth College conferred the degree of master of science on Mr. John Hildreth McCollom, superintendent of the Boston City Hospital.

Promotions and Appointments to the Staff of the Rockefeller Institute.—The Board of Directors of the Rockefeller Institute for Medical Research announces the following promotions and appointments for the year 1910-1911: Laboratory Staff.—Member: Jacques Loeb, experimental biology. Associates: W. A. Jacobs, biological chemistry; D. R. Joseph, physiology and pharmacology; Peyton Rous, pathology; B. T. Terry, protozoology, and D. D. Van Slyke, biological chemistry. Assistants: M. T. Burrows, experimental surgery; P. F. Clark, bacteriology; I. S. Kleiner, physiology and pharmacology, and Hardolph Wasteneys, experimental biology. Fellows: F. J. Birchard, biological chemistry, and F. B. La Forge, biological chemistry. Scholar: J. Bronfenbrenner, pathology. Hospital Staff.—Resident physician, G. Canby Robinson; internes, George Draper, H. K. Marks, F. W. Peabody, H. F. Swift. General Manager.—Jerome D. Greene.

The Wayne County, Mich., Medical Society, after years of effort, has raised $30,000 and purchased a permanent home for itself, the Marvin Preston homestead, at 33 High Street, Detroit. The house, which is well fitted for the purpose, will be renovated. Dr. Ben Brodie has donated his father's collection of medical books as the foundation for the library and about $20,000 will be spent on completing it and equipping a laboratory. There are about four hundred and fifty physicians of both schools in the society. Owing to the fact that the present articles of incorporation do not permit the ownership of property the society held a special meeting for the purpose of reincorporating.

The Third Councillor District of the Indiana State Medical Association met at New Albany on June 24th. About forty physicians were present, and the meeting was one of the most interesting ever held by the society. Dr. E. P. Easley, of New Albany, president of the association, presided, and Dr. T. C. Kennedy, of Indianapolis, president of the State Medical Association, delivered an address. An interesting feature of the meeting was an address by Dr. J. M. Mathews, of Louisville, president of the Kentucky Medical Association. The officers elected for the ensuing year are: Dr. J. B. Duncan, of Bedford, president; Dr. J. B. Salb, of Jasper, vice-president; Dr. I. N. Ruddell, of Jeffersonville, secretary.

The Associated Physicians of Long Island.—The thirty-seventh annual meeting of this organization was held on Saturday afternoon, June 25th, on the west bank of the Nissequoque River, near Smithtown, L. I. Immediately upon arriving, the visitors sat down to luncheon, and later in the afternoon a Rhode Island clambake was served. Dr. Harvey W. Wiley, chief of the Bureau of Chemistry, Department of Agriculture, Washington, D. C., was the guest of honor. The business of the meeting included the reading of reports, the inaugural address of the new president, Dr. Thomas R. French, of Brooklyn, and a paper by Dr. Wiley on Preventive Medicine from a Chemical Standpoint. Dr. Wiley was elected an honorary member of the association, other honorary members being Mr. Theodore Roosevelt and General Wood, U. S. Army. The October meeting of the association will be held in Oyster Bay.

The Medical Society of New Jersey held its one hundred and forty-fourth annual meeting in Atlantic City on June 28th, 29th, and 30th, under the presidency of Dr. B. A. Waddington, of Salem. About two hundred physicians were present. A splendid programme had been prepared, among those reading papers being Dr. John B. Deaver, of Philadelphia, and Dr. William M. Leszynsky, of New York. Much excitement was aroused by Governor Fort's veto of the bill requiring all osteopaths to pass a stricter examination before being licensed by the State board, and a resolution formally committing the society to an official condemnation of the Governor was prepared by the board of trustees. The officers elected to serve for the ensuing year are: President, Dr. Thomas H. McKenzie, of Trenton; vice-presidents, Dr. Daniel Strock, of Camden; Dr. Morton L. Wilson, of Elizabeth; Dr. Enoch Hollingshead, of Pemberton; corresponding secretary, Dr. Harry A. Stout, of Wenonah; recording secretary, Dr. William J. Chandler, of South Orange; treasurer, Dr. Archibald Mercer, of Newark.

To Abolish the Kansas City, Kan., Board of Health.—At a recent meeting of the health commissioners of Kansas, an ordinance was introduced in which it was proposed to abolish the board of health of Kansas City, putting the enforcement of all health regulations into the hands of a commissioner, under a department of health. The ordinance provides that the commissioner of health must be a reputable physician, skilled in chemistry and analysis. He is to be assisted by several deputies, one of whom is to be a veterinarian. These deputies are to inspect and grade dairies, milk cars, groceries, butcher shops, restaurants, and other places where food is kept for sale. The health commissioner is to maintain a laboratory where he will make chemical and bacteriological examinations of the city water, milk, and food. He also is to supervise the quarantine in cases of contagious disease. The establishing of the health department will not only do away with the Kansas City, Kan., board of health, but it will also result in closing the city isolation hospital. Smallpox will be quarantined the same as diphtheria and scarlet fever and the patients will not be taken to an isolated place to remain until the disease is cured.

Mortality Statistics of St. Louis.—During the month of April, 1910, there were reported to the Health Department of St. Louis 832 deaths from all causes, corresponding to an annual death rate of 13.32 in a thousand of population. Of the total number of deaths, 145 were under five years of age; 93 under one year of age, 14 between one and two years of age, and 38 between two and five years of age. There were 50 stillbirths reported. The deaths from pulmonary tuberculosis numbered 107.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Department of Health for the following statement of new cases and deaths reported for the two weeks ending July 2, 1910:

	June 25th		July 2d	
	Cases.	Deaths.	Cases.	Deaths.
Tuberculosis pulmonalis	518	137	493	158
Diphtheria and croup	323	37	371	26
Measles	843	20	623	20
Scarlet fever	360	20	236	13
Smallpox	..	..	2	..
Varicella	232	..	95	..
Typhoid fever	26	7	45	13
Whooping cough	60	3	57	4
Cerebrospinal meningitis	4	5	2	2
Total	2,366	229	1,924	236

Vital Statistics of New York.—During the week ending June 25, 1910, the deaths from all causes reported to the Department of Health of the City of New York numbered 1,425, corresponding to annual death rate of 15.77, in a thousand of population, as compared with a rate of 16.48 in the corresponding week in 1909. The annual death rate for the week in each of the five boroughs was as follows: Manhattan, 14.78; the Bronx, 17.20; Brooklyn, 16.67; Queens, 16.58; Richmond, 19.08. There were 125 stillbirths. The deaths of children under five years of age numbered 492; 344 under one year of age, 88 between one and two years of age, and 492 under five years of age. The deaths from diarrhœal diseases, under five years of age, numbered 136, over five years of age, 145. There were 18 deaths from sunstroke, 15 suicides, 7 deaths from homicide, and 98 from accidents.

The Health of Chicago.—During the week ending June 25, 1910, the following new cases of and deaths from transmissible diseases were reported to the Department of Health of Chicago: Typhoid fever, 10 cases, 2 deaths; measles, 398 cases, 5 deaths; German measles, 58 cases, 0 deaths; whooping cough, 36 cases, 3 deaths; scarlet fever, 120 cases, 10 deaths; diphtheria, 124 cases, 15 deaths; chickenpox, 32 cases, 0 deaths; tuberculosis, 151 cases, 60 deaths; pneumonia, 32 cases, 95 deaths. Sixteen cases of contagious diseases of minor importance were also reported, making the total number of cases reported 977. The deaths, under two years of age, from diarrhœal diseases numbered 56. There were 7 deaths from sunstroke and 36 from congenital defects and accidents. The total deaths of children under five years of age numbered 190, of whom 121 were under one year of age. The total deaths from all causes, exclusive of stillbirths, numbered 631, corresponding to an annual death rate of 14.4 in a thousand of population, as compared with a death rate of 14.3 for the preceding week, and 11.5 for the corresponding week in 1909.

The Health of Philadelphia.—During the week ending May 14, 1910, the following cases of and deaths from transmissible diseases were reported to the Department of Health of Philadelphia: Typhoid fever, 27 cases, 3 deaths; malarial fever, 2 cases, 0 deaths; scarlet fever, 37 cases, 4 deaths; smallpox, 3 cases, 1 death; chickenpox, 35 cases, 0 deaths; diphtheria, 66 cases, 12 deaths; measles, 273 cases, 6 deaths; whooping cough, 61 cases, 13 deaths; pulmonary tuberculosis, 128 cases, 60 deaths; pneumonia, 49 cases, 36 deaths; erysipelas, 6 cases, 0 deaths; mumps, 48 cases, 0 deaths; tetanus, 1 case, 0 deaths; trachoma, 14 cases, 0 deaths. There were 8 deaths from tuberculosis other than that of the lungs, 5 deaths from puerperal fever, 1 death from dysentery, and 21 deaths from diarrhœal diseases under two years of age. There were 36 stillbirths, 24 males and 12 females. The deaths of children under five years of age numbered 122; 82 under one year of age, 22 between one and two years of age, and 18 between two and five years of age. The deaths from all causes numbered 505, in an estimated population of 1,508,400, corresponding to an annual death rate of 16.43 in a thousand of population.

The North Carolina Medical Society held its fifty-seventh annual meeting at Wrightsville Beach, on June 21st, 22d, and 23d. In addition to a full attendance of the members of the society, many prominent physicians from other States were present and took part in the discussions, and the meeting was in every way a great success. The following officers were elected for the ensuing year: President, Dr. C. M. Poole, of Salisbury; first vice-president, Dr. J. V. McGoughan, of Fayetteville; second vice-president, Dr. W. E. Warren, of Williamston; third vice-president, Dr. L. N. Glenn, of Gastonia; secretary for two years, Dr. D. A. Stanton, of High Point; treasurer for two years, Dr. H. D. Walker, of Elizabeth City. Next year's meeting will be held in Charlotte.

Work of the National Association for the Study and Prevention of Tuberculosis.—From the report of the executive secretary submitted at the annual meeting of the association, held in Washington, May 2, 1910, it is to be noted that the work of the association has been carried on largely on educational lines and that the bureau of publicity has been especially active. Investigations are being made into the cost of sanatorium maintenance, and the operating expenses of thirty institutions in various parts of the United States have been analyzed, classified, and studied in relation to the number of days' treatment afforded, and the geographical location of the sanatoria. Studies are also being made of the mortality from tuberculosis in American cities with a population of 30,000 and over. The association during the year published a volume on sanatorium construction, and has established a bureau which is collecting plans of tuberculosis sanatoria and hospitals. This information will be available for those contemplating the erection of institutions. It is stated that there are in the United States 431 associations for the prevention of tuberculosis; 286 special tuberculosis dispensaries; 393 special tuberculosis sanatoria and hospitals, and provision has been made for a total of 22,720 beds for tuberculosis patients.

The National Confederation of State Medical Examining and Licensing Boards held its twentieth annual convention in St. Louis, Mo., on Monday, June 6th, under the presidency of Dr. A. Ravogli, of Cincinnati. Dr. A. H. Hamel, chairman of the local committee of arrangements, introduced Dr. Joseph S. Grindon, who delivered the address of welcome, which was responded to by Dr. Joseph C. Guernsey. Dr. Ravogli delivered the annual address of the president, his subject being A Plea for more Practical and Extended Clinical Instruction for Medical Students. The report of the secretary-treasurer, Dr. M. G. Motter, was read, audited and approved. The report of the executive council was read by Dr. N. R. Coleman, referred to a committee which commended the subject matter for its practical value to medical educators, and recommended the adoption of an amendment to the constitution providing for a corresponding secretary, and the appointment of a committee to confer with a committee from the American Confederation of Reciprocating, Examining and Licensing Medical Boards on the feasibility of uniting the two bodies. According to the subsequent report of this committee, the proposed union was found to be impracticable at present. The report of the Committee on Clinical Instruction, by Dr. Henry Beates, and that on Materia Medica, by Dr. M. G. Motter, were read and referred for publication. The paper by Dr. Abraham Flexner, of the Carnegie Foundation, on State Boards in Relation to Medical Education, elicited a lively discussion and has since become the subject of considerable newspaper comment. An interesting feature of the programme was the presentation of a "symposium" on clinical instruction. The discussion was opened by Dr. George Dock, of New Orleans, others taking part being Dr. Fred C. Zapffe, Dr. J. C. Guernsey, Dr. J. C. Oliver, Dr. A. F. Stephens, Dr. Thomas McCrae, Dr. A. D. Bevan, Dr. C. F. Hoover, Dr. W. A. Hardaway, Dr. D. T. Vail, and Dr. J. Coons. The Board of Medical Examiners of Utah, the State Medical Board of Arkansas Medical Society, and the Eclectic State Medical Board of Arkansas were admitted to membership in the confederation. The following officers were elected: President, Dr. J. C. Guernsey, of Philadelphia; first vice-president, Dr. James A. Egan, of Springfield, Ill.; second vice-president, Dr. Charles A. Tuttle, of New Haven, Conn.; secretary-treasurer, Dr. George H. Matson, of Columbus, Ohio; assistant secretary, Dr. Darlington Snyder, of Columbus, Ohio.

Pith of Current Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL.

June 23, 1910.

1. Dyspepsia and Indigestion Viewed from a Surgical Standpoint, By John C. Munro.
2. A Report on the Hundred and Seventy-two Patients Treated at the Massachusetts General Hospital for Inguinal Hernia in the Year 1905, with the End Results of the Operations, By Channing C. Simmons.
3. Arthrodesis and Its Application in Infantile Paralysis of the Foot, By W. R. MacAusland and B. E. Wood.
4. The Effect of Tobacco on the Ear and Upper Respiratory Tract, By Henry O. Reik.

4. The Effect of Tobacco on the Ear and Upper Respiratory Tract.—Reik says that it has not been proved that tobacco causes any definite, characteristic lesions of the nose, throat, or ear. While it is possible that the excessive use of tobacco may, by indirect action, produce a toxic effect upon the olfactory and auditory nerves, with resulting impairment of the sense of smell or of hearing, there is not at the present time any definite laboratory proof for such an opinion, nor is there sufficient clinical evidence to substantiate the belief. The ill effects of tobacco smoke upon existing diseases of the throat, arising from other causes, is established and is the same as would be observed from any other form of irritation. That gastric and systemic nervous disturbances may arise from excessive use of tobacco, in any of its forms, is unquestioned; the nicotine content of tobacco is a recognized poisonous substance and, in the process of smoking, there are evolved other injurious chemical products. Carbon monoxide is probably a more dangerous and injurious constituent of tobacco smoke than is nicotine, only a very fractional amount of which ever enters the tissues. If there is any more danger to be anticipated from cigarette than from cigar smoking it is to be looked for solely in the inhalation of the smoke; cigarette smoking without inhaling is no more injurious than is pipe or cigar smoking, probably not as much so, unless enormous numbers are smoked.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

July 2, 1910.

1. Dermatology as a Specialty and Its Relation to Internal Medicine, By Grover W. Wende.
2. Pemphigus Foliaceus, By Alfred Schalek.
3. Experiences with the Duodenal Contents, By Max Einhorn.
4. The Cutting in Two of a Large Steel Pin While Fixed in the Left Bronchus and Its Removal by Lower Bronchoscopy. A Bronchoscopic Pin Cutter and Fragment Holder Devised to Meet the Emergency, By W. E. Casselberry.
5. A Pneumatic Shield for Operations on the Lung, By W. Wayne Babcock.
6. The Clinical Recognition of the Scaphoid Type of Scapula and of Some of Its Correlations, By William W. Graves.
7. Inguinal Hernia Following Appendectomy, By Alanson M. Pond.
8. Phrenitis Prostatica, By James F. Percy.
9. Report of the Committee for the Study of the Relation of Tuberculosis to Diseases of the Eye, By William H. Wilder.

10. A Case of Epistaxis, By Edmond R. Blaauw.
11. Hyperæmia Treatment in Infections of the Breast, By Bertram M. Bernheim.
12. Experimental Study of Bacteria Isolated from Tonsils, By David J. Davis.
13. An Electrode for the Ionization of Silver, Zinc, or Copper in the Treatment of Chronic Urethritis, By J. P. Armstrong.
14. Rational Treatment of Burns, By H. L. Fancher.

2. **Pemphigus.** — Schalek remarks that the characteristic feature of real pemphigus is the bleb, which must be elementary, it must begin as such and not be due to secondary changes of other skin lesions. It must be the essential and not an incidental or unusual feature of the disease. It must not be a local condition, but the manifestation of a grave internal disorder. Its course is chronic, with exacerbations and remissions, leading to a deep systemic depression and frequently to death. With such restrictions it may easily be seen that many cases of pemphigus reported must be excluded from consideration under this head and that pemphigus as an idiopathic disease called so in the absence of a better knowledge of its nature is a rare disease. Of the ætiology of pemphigus nothing is known. Against a microbic theory speaks the fact that the contents of fresh bullæ are sterile; that there is no clinical evidence of its contagiousness; that not more than one case in one family has been reported. A toxic process was considered from the analogy of the action of certain poisons and drugs which, when introduced into the system, were followed by the eruption of blebs. The occasional increased percentage of eosinophiles was used for this argument. Many attribute pemphigus to a neuropathic cause, arguing that some functional and organic nerve disturbances manifest themselves by the appearance of blebs. Numerous examinations of peripheral and central nerve tissues in autopsies have shown no pathological changes in them. Age, sex, race, and climate have no predisposing influence. Riecke says very tersely, that our total ignorance of the ætiology of pemphigus serves as a valuable diagnostic point in its distinction from other bullous diseases. The pathology of pemphigus has been thoroughly studied. The location of the bleb may be interepithelial or between the epidermis and the corium. The epithelial cells are œdematous and swollen. The interspinous spaces are occluded. The corium is the seat of a mild, probably secondary, inflammation. The papillary bloodvessels are dilated and surrounded by small mononuclear leucocytes. An excess of eosinophils is found occasionally in the blood and the serum and was for a time considered distinctive, but no special significance can be attributed to it. In autopsies of bodies of persons dead from pamphigus, only coincidental changes were found, but nothing directly pertaining to the disease.

3. **Duodenal Contents.** — Einhorn has tabulated the results of his examination of the stomach contents of forty patients. He found that among the seven cases of achylia gastrica trypsin was absent twice and once was only very weak, whereas steapsin and amylopsin were present. The disturbance of the pancreatic function in this affection of the stomach explains why we frequently find intestinal troubles associated with it. Admixture of mucus with the duodenal contents occurs in two ways and is probably of some significance. The mucus may be evenly and intimately mixed with the contents, or it may appear at intervals in the relatively clear contents of the duodenum. The latter would point to the origin of the mucus from the duodenum, whereas its intimate admixture would point to its origin either in the pancreas or the bile passages. Presence of mucus in conjunction with other clinical symptoms (diarrhœa, distress some time after meals) would lead us to think of duodenal catarrh. Occasionally we obtain on aspiration of the duodenal contents at first only a clear or slightly amber colored fluid. It is of alkaline reaction and contains the pancreatic ferments. Usually after waiting a short time and after repeated aspirations a golden yellow fluid (containing bile) appears. This has no diagnostic significance. If, however, after patient waiting and aspirating, only pancreatic juice but no trace of bile appears, it may be of some importance, particularly in cases of chronic jaundice. If bile is present in the duodenal contents a complete occlusion of the common bileduct can be excluded. If the bile is entirely missing and pancreatic juice is present, it points to the seat of the obstruction above the common duct.

MEDICAL RECORD.

July 2, 1910.

1. Surgery as a Science and Art in the City of New York in the Middle of the Last Century, By Stephen Smith.
2. Superficial and Deep Sensory Disturbances in Their Relation to Astereognosis and Asymobolia, By Alfred Gordon.
3. Œsophageal Diverticula, By Emil Mayer.
4. Nasal Osteoma. Report of Case: Operation, By J. H. Guntzer.
5. The Treatment of Chorea Minor with Large Doses of Arsenic (Method of Comby-Filatov), By G. B. Hassin and A. M. Hershfield.
6. The Abstraction of Calcium Salts from the Mother's Blood by the Fœtus a Cause of Large White Kidney in the Former, By Jennie G. Drennan.
7. Precautions in Laboratory and Morgue that Lessen the Danger when Dealing with Plague, By Donald H. Currie.

3. **Œsophageal Diverticula.**—Mayer says that in œsophageal diverticula examinations should be conducted in a routine manner, the œsophagoscope being used last, bearing in mind always the danger of a rupture of a possible aneurysm. In making the examination with the x ray, the introduction of a soft tube filled with shot may take the place of bismuth. As to treatment, Mayer says that where the diverticulum has not occasioned any symptoms beyond that of mild distress, we may content ourselves with occasional washing out of the diverticulum and care as to diet. Where, however, emaciation exists, the diagnosis having been firmly established, radical operation may be performed with success. Whether a previous gastrostomy should be done or not, must be decided for the individual case, but enough information is at hand to show that the operation for pharyngœsophageal diverticulum is readily performed and reasonably safe. Stetten has collected statistics of sixty radically operated cases;

of these fifty patients were cured and ten died, a mortality of only 16.6 per cent.

4. **Nasal Osteoma.**—Güntzer reports a case of nasal osteoma and concludes that, had a diagnosis of osteoma been made prior to operation, the x ray would have been a valuable means of ascertaining the extent, location, and contour of the tumor. To limit the amount of hæmorrhage during an extensive operation about the face, a very vascular field, ligation of the external carotid artery may or may not control the bleeding. The complaint of not a few operators is that the hæmorrhage in some of the cases is not always controlled by this ligation and that the ligation of the external carotid may be a risky procedure and be followed by formidable consequences, as was reported by Hertle, who cites a case in which the external carotid was tied, with later formation of a thrombus of the internal carotid and multiple cerebral emboli as a result of which the patient died. It is remarkable that an osteoma of the nose may grow to so large a size and exercise enough pressure to produce bone atrophy and absorption without causing any discomfort or particular clinical symptoms during an extended period of growth, and that the antrum of Highmore may be filled with pus and lined by deeply degenerated membrane without creating annoyance or symptoms.

6. **Abstraction of Calcium Salts from the Mother's Blood by the Fœtus a Cause of Large White Kidney in the Mother.**—Drennan concludes from her observation that cells undergo normally some fatty degeneration and calcium salts normally unite with this fat to form lipoids in which form it is conveyed from the organs to other situations, and after the abstraction of its salts is deposited there as neutral fat. In pregnancy there is an increased production of fat due to the increased work on the part of the renal epithelium, and there may be a decreased amount of calcium in the mother's blood due to its abstraction by the fœtus. Therefore, the fat in the renal epithelium is not combined with calcium to form lipoids and consequently remains there as neutral fat, causing an interference with the function of the cells.

7. **Precautions in Laboratory Work when Experimenting with Plague.**—Currie observes that the laboratory should be insect and rat proof. The employees should receive definite instructions as to the precautions to be observed. One attendant should be made responsible for the absence of flies within the laboratory. If dead rats are being received for examination the trappers should bring them to the laboratory in covered buckets, each of which should have a small hole in the lid; this hole should be corked. A laboratory attendant should receive the bucket from the trapper, remove the cork and place a funnel through the opening in the lid of the bucket, and fill the latter with an emulsion of kerosine and soap containing 5 per cent. of crude phenol. The cork should be replaced and the filled bucket allowed to stand for twenty minutes. At the end of this time the animals may be taken out of the bucket by means of long handled forceps and placed in a solution of bichloride; this serves to wash off the emulsion and complete the destruction of the insect parasites of the rat. When the emulsion has been washed off in the bichloride solution the animal is lifted out of the latter fluid by means of a pair of long handled forceps, placed on a convenient sized board, and necropsied. If the necropsy demonstrates that the animal is probably infected with plague its body, together with the board it was necropsied on, should be burned. If the crematory is outside of the laboratory, the animal before being taken from the laboratory should be covered with enough absorbent cotton to take up the fluids that issue from its incised body. In inoculating laboratory animals with plague it is safer to employ the platinum loop than the hypodermic syringe; the latter instrument is only necessary in intravenous or intraperitoneal inoculations, and these latter methods are rarely necessary in the routine diagnosis of plague. After inoculation a glass jar should be chosen, several inches of sawdust placed in the bottom of it, and enough food supplied to last ten or twelve days (one large cabbage will suffice in the case of a guinea pig). The animal should then be placed in this jar, and the latter covered with a double thickness of cheese cloth which should be bound to the jar by means of a strip of adhesive plaster to prevent the escape of small insects. This cage should not be reopened during the life of the animal. If the animal is still alive after the twelfth day it should be killed with chloroform. Attendants should be instructed to listen for a peculiar sound which the guinea pig utters when suffering from pneumonic plague (this sound has more the character of a sneeze than of a cough) and which is more apt to be noted in animals in which the illness is prolonged beyond the tenth day. After the death of the animal chloroform is poured through the cheese cloth cover and allowed to act for twenty minutes. A small hole is then made in the cheese cloth cover, a funnel inserted, and the jar nearly filled with a solution of commercial lye (one pound of lye to three gallons of water). After this solution has acted for five minutes the cheese cloth cover should be removed and placed in the Arnold's steam sterilizer. The animal is then removed from the jar, by means of forceps, and placed in a strongly acidulated solution of bichloride of mercury. The lye solution should be allowed to remain in the jar for twenty-four hours to permit this chemical to penetrate the sawdust, fæces, and unconsumed food of the animal. The jar should then be emptied of its contents. The precautions to be observed in the necropsy of rabbits and guinea pigs are identical with those described in the case of rats.

BRITISH MEDICAL JOURNAL.

June 18, 1910.

1. Reflections on Faith Healing, By Sir Clifford Allbutt.
2. "Suggestions" in the Treatment of Disease, By Sir Henry Morris.
3. Remarks on Spiritual Healing. By H. T. Butlin.
4. The Faith that Heals, By William Osler.
5. Considerations on the Occult. By T. Claye Shaw.
6. Abstract of a Lecture on Psycho-Pneumatology: or, the Interactions of Mind, Body, and Soul, By James Rorie.

This number of the *British Medical Journal* contains very instructive articles on faith cure which should be read in the original by those who are interested in the question.

LANCET.

June 18, 1910.

1. Foreign Bodies in the Air Passages, By Rickman John Godlee.
2. The Precipitin Test in Medicolegal Work, By E. J. McWeeney
3. Observations on Conjunctivitis. By Robert W. Doyne.
4. Influenzal Meningitis, By Frederick E. Batten.
5. A Comparison Made between the Simple Gastrocirculatory Seizure and the Angina Pectoris Attack, By Walter Verdon.
6. Four Cases of Sporadic Cretinism in One Family, By B. Crossfield Stevens.
7. A Note on the Treatment of the Partially Drowned, By J. A. Barnes

4. Influenzal Meningitis.—Batten says that lumbar puncture in influenzal meningitis has been performed in most of the cases recorded, but it can hardly be regarded as a therapeutic measure, although recovery has followed this procedure in some cases. In the case under discussion the child was for six days treated with the antimeningococcal serum of the Lister Institute, as the case was at first regarded as one of meningococcal infection. When the nature of the infection was recognized the serum was stopped, and ten grains of urotropine were given every four hours for three weeks. The *rationale* of the administration of urotropine is based upon the observation of Crowe, "that after doses of urotropine within therapeutic limits a sufficient amount of the drug appears in the cerebrospinal fluid to exercise a decided inhibitory effect on the growth of organisms, and will markedly defer, and in some cases prevent, the onset of a fatal meningitis." The favorable result obtained in this case, concludes the author, cannot with certainty be attributed to the treatment with urotropine, but the fact that all other cases of this nature in children under two years of age have proved fatal, whereas this child recovered, makes the treatment worthy of further trial. Although the cases differ somewhat in the degree to which the bacteriological examination has been carried, yet they may all be accepted as cases of influenzal meningitis. The diagnosis of an influenzal meningitis must depend solely upon the bacteriological examination, for it is impossible clinically to distinguish influenzal meningitis from other forms of meningitis.

7. Treatment of the Partially Drowned.—Barnes says that apart from sequelæ, death from drowning appears to be due to asphyxia from the mechanical action of the water entering and blocking the air passages; or shock from sudden and prolonged immersion. These may be combined, but in most cases one or other is the prominent symptom. With regard to the first class of cases, if any considerable quantity of water has entered the bronchial tubes, unless it is very quickly expelled by a voluntary effort, such cases are hopeless. The condition is shown by the continued expulsion of froth when artificial respiration is performed, although the mouth and pharynx have been well wiped out before commencing. Where shock is the prominent feature there is prospect of saving. In these cases there are present unconsciousness, a feeble and intermittent pulse, intermission or complete stoppage of respiration, and, in fact, all the signs of severe shock. Often after the mouth and pharynx have once been cleared no more fluid or froth is extruded, the stoppage of respiration having acted, to a certain extent beneficially, in preventing the inspiration of fluid. The usual directions given for the treatment of the apparently drowned are to perform artificial respiration and apply warmth. If, however, we look upon such cases as cases chiefly of shock, it is obvious that something more than this may be done. Shock may be looked upon as the result of a number of afferent impulses partially paralyzing the vasomotor centre, and so causing a rapid fall in blood pressure; the result of this is that the greater portion of the blood of the body stagnates in the splanchnic area, and the brain, including the circulatory and respiratory centres, is robbed of its proper supply, and these centres are still further depressed. The result to be aimed at, therefore, is the driving of the blood from the abdomen, so that the brain may receive its proper supply. This may be done by an attempt at autotransfusion as follows: Having started an assistant on artificial respiration, Barnes firmly bandages the legs from the feet upwards. A roller towel is then passed round the patient's abdomen, the two ends crossing in front. One assistant is told off to each of these ends. As the arms are brought down to the chest in the *expiratory* movement of artificial expiration (Silvester's method) these two assistants, grasping the towel ends firmly with their right hands, pull them, at the same time making pressure on the abdomen with their left hands. In this way considerable squeezing of the abdomen is obtained. As the *inspiratory* movement commences the pressure is relaxed so as not to interfere with the expansion of the lungs. The process is continued synchronously with the movements of artificial respiration. The idea is that this acts beneficially in two ways: 1. It assists, by pressing on the diaphragm, to more completely empty the chest with expiration; and, 2, it squeezes some of the excess of blood from the abdominal cavity. The bandaging of the legs and arrangement of the towel can be very quickly carried out with assistance, of which there is usually no lack in these cases. Gravity should also be made to assist the flow of blood to the brain by keeping the head at a lower level than the body. Barnes gives a hypodermic injection of ether (30 minims) and usually one of strychnine as well. The objection to the use of these stimulants—that they stimulate an already tired centre and are quickly followed by increased depression—seems hardly to apply in cases of drowning, as when once reaction has set in recovery is usually rapid. Adrenalin chloride given hypodermically (30 minims of a 1 in 1,000 solution) should act beneficially by raising the blood pressure.

BERLINER KLINISCHE WOCHENSCHRIFT.

May 23, 1910.

1. Narcosis in Man by Means of the Continuous Intratracheal Insufflation of Meltzer. By C. A. Elsberg.
2. Intratracheal Insufflation, By H. Lilienthal and C. A. Elsberg.
3. Insufflation Narcosis, By Ernst Unger and Max Bettmann.
4. Clinical Contribution to the Subject of Congenital Hereditary Paralyses of the Eye Muscles, By Gebb and Voss

5. Two Cases of Primary Sarcoma of the Stomach, By Maschke.
6. More Concerning Intramuscular Injections of Menthol and Eucalyptol in Bronchitis, Gangrene of the Lung, and Tuberculosis, By M. Berliner.
7. Morbus Cœruleus in Four Generations, By O. Burwinkel.
8. Quantitative Estimation of Antibodies in the Wassermann Reaction, By J. Zeissler
9. Experimental Studies Concerning the Action of Smaller and Larger Quantities of the X Rays upon Young Cells, By H. E. Schmidt.
10. Extramucous (Partial, Submucous) Pyloroplastic, By W. Kausch.
11. Remarks Concerning Balneotherapy in Urinary Diseases, By Wasserthal.
12. The Results of Modern Cancer Research, By Hoffmann.

1, 2, and 3. Narcosis by the Intratracheal Insufflation of Air.—Elsberg and Lilienthal describe the application of the method of narcosis described by Meltzer and Auer in the *Journal of Experimental Medicine* for 1909 at the Mount Sinai Hospital in New York, while Unger and Bettmann speak of their experience with it in Germany.

4. Congenital Hereditary Paralyses of the Eye Muscles.—Gebb and Voss describe three cases of this rare condition, the cause of which is unknown. The first patient was a woman, forty-seven years old. Neither her parents nor any of her brothers and sisters had similar trouble. Of her three children two daughters have the same defect, while the son has not. The paralyzed muscles of her right eye were the levator palpebræ, both obliqui, the rectus internus, and the rectus superior; of her left eye the obliquus superior, the rectus inferior, and the rectus superior. The unaffected muscles of her right eye were the abducens and rectus inferior; of her left eye the levator palpebræ, the abducens, the rectus internus, and the obliquus inferior. The second patient was a woman, seventeen years old, daughter of the first. The paralyzed muscles of her right eye were the levator palpebræ, abducens, obliquus inferior, rectus inferior, and rectus superior; of her left the rectus inferior, rectus superior, rectus internus, and obliquus inferior. The unaffected muscles were of the right the obliquus superior and rectus inferior; of the left the abducens, obliquus inferior, and levator palpebræ. The third patient was a girl, seven years old, the youngest child of the first patient. Her paralyzed muscles were of the right eye the levator palpebræ, abducens, both obliqui, rectus superior; of the left the rectus superior, rectus inferior, obliquus inferior. Partially paralyzed right rectus internus; left abducens, and obliquus superior. The unaffected muscles were of the right eye the rectus inferior; of the left the levator palpebræ, and rectus internus. These defects are tabulated by the authors in accordance with the probable arrangement of the nuclei of the muscles of the eye showing that not a single nucleus escaped on both sides. It is noticeable that the facialis nucleus, which lies so close to the abducens nucleus, escaped, and that there were no defects in the muscles of the body. The seroreaction for syphilis was negative.

7. Morbus Cœruleus in Four Generations.—Burwinkel tells of a grandmother, a mother, a brother and sister, and a child of the latter all affected with cyanosis caused by a patent foramen ovale of the heart.

8. Quantitative Estimation of Antibodies in the Wassermann Reaction. — Zeissler distinguishes five degrees of strength of the positive reaction and says that all five strengths may be met with, at least in the serum, in almost all syphilogenous diseases, but that certain diseases usually present the higher, others the lower degrees of strength. In tabes and cerebrospinal syphilis the reaction in the cerebrospinal fluid when altogether positive, is very weak, in paralysis it is almost always positive and usually much stronger. The higher strengths of reaction generally are to be met with in the spinal fluid only in paralysis. There is a marked parallelism between the average content of antibodies and the frequency of the Wassermann reaction in the individual diseases. Diseases with a high average of antibodies only rarely go along with completely negative reaction. In paralytics the content of antibodies may greatly decrease both in the blood and in the spinal fluid. In two tabetics the increase of the antibodies in the blood coincided with the onset of gastric crises which had not previously been present. In rare cases the spinal fluid occasionally seems to contain more antibodies than the serum of the same patient. Finally he urges that we should pay more attention than hitherto to the exact quantitative estimation of the antibodies present.

9. Action of the X Rays upon Young Cells.—Schmidt has demonstrated experimentally that in small doses the x rays stimulate cell activity, while in large ones they exert an inhibitive action.

May 30, 1910.

1. The Demonstration of Very Minute Quantities of Blood in Clinical and Forensic Medicine, By H. Citron.
2. The Absorption of Radium Emanation through the Skin, By W. Engelmann.
3. Clinical Studies of Certain Changes in the Respiratory Rhythm, By Cesare Frugoni.
4. The Pneumatic Treatment of Chronic Bronchitis, By Samter.
5. The Treatment of Paralytic Conditions of the Upper Extremities, By Carl Helbing.
6. Icterus in Perityphlitis. By Eugen Hollaender.
7. Malignant Chorioepithelioma of the Falloppian Tube, By C. Davidsohn.
8. Hysteria and Foreign Bodies in the Intestine, By Most.
9. Modern Röntgenology in the Service of the General Practitioner, By Gustav Loose.

2. Absorption of Radium Emanation through the Skin.—Engelmann says that after emanation baths lasting an hour and of the strength of 12,000 to 15,000 units the emanation can be demonstrated in the expired breath even when its inhalation has been excluded with certainty.

3. Changes in the Respiratory Rhythm.—Frugoni gives the following as the conclusions drawn in a paper published by him in *Policlinico sezione medica:* 1. A systematic study of the capacity for change of periodical respiration in general by means of inhalations of oxygen shows that no general law can be laid down, that periodical respiration may or may not be susceptible of modification, and that it may be done away with entirely by means of oxygen. There are periodical respirations which

may be modified and others which may not, so that in one and the same person and at different times contradictory results may be obtained, which are sometimes of importance, as they permit of inferences concerning the greater or less degree of pathological changes, which are in general greater when a modification is not possible and particularly when there are repeated attacks with different results in the same patient. 2. Sometimes in the course of a meningitis a periodical groaning or sighing occurs in conjunction with intermittent breathing and gives the impression of a reaction of the organism to pain. He distinguishes two forms which he designates the coincident and the tardy types. In the first the groan begins with the first breath of the spasms of breathing, while in the second it begins with the second breath or later. A study of these cases leads him to believe that the periodical sighing of the tardy type indicates in general a more serious and deeper pathological change of the respiratory centre and of the sensorium. 3. By depression of the centres with certain drugs, or by mechanically preventing respiration he was always able to obtain periodical respiration. 4. In Grocco's dissociated respiration there is incoordination of the muscles of the thorax and abdomen so that they may act completely in opposition to each other. In such cases the tendency to the periodical form is such that each pathological factor exerts the maximal functional disturbance. The prognostic signification of such a condition is serious. 5. The dissociated respiration of Grocco is less rare than is usually thought. It is not easy to diagnosticate. The thoracoabdominal opposition marks the most extreme type only, and it is necessary to exclude a partial paralysis of the one and not of the other, as well as to determine that the individual incoordinate acts are active movements and not passive. When the dissociated respiration is distinct the prognosis becomes very unfavorable as it indicates a very serious disturbance of the respiratory centres. Still these cases do not always prove fatal. 6. Toward death it is not rare for any special rhythm to cease and respiration to become deeper and more frequent. The breast muscles usually discontinue first and the last respiratory movements are made by the diaphragm as contractions without special rhythm and separated by long pauses. 7. In nervous or functional disturbances of respiration an increase of function (tachypnœa, polypnœa) is usual, while the opposite (spanopnœa, oligopnœa) is rare. Continuous forms exhibit also a qualitative disturbance in spasms, usually quick and transient, rarely tonic, of various groups of muscles, which may bring about great disturbance and ataxic incoordination of the muscles of respiration. A very frequent peculiarity is the tendency to hiccough, vomiting, the utterance of inarticulate noises, sometimes connected, sometimes explosive, or to other more or less noisy sounds. 8. The organic change frequently observed in the nose or neck is to be looked upon in the same way as the spina hysterica. 9. The respiratory muscles, especially the diaphragm, are fairly often involved in chorea minor so as to cause a change in rhythm. 10. In some cases of severe, persistent nervous inversion of the rhythm respiration of the true periodical type may be observed at the transition from waking to sleep and during the first stages of the latter. 11. In the nervous forms there is commonly a complete disproportion between the heart and the respiration, but following no absolute law.

4. Pneumatic Treatment of Chronic Bronchitis.—Samter considers pneumotherapy of extraordinary value in cases of chronic bronchitis, particularly when due to cardiac insufficiency, when not complicated by compensatory disturbances in other organs, such as albuminuria and enlargement of the liver.

6. Icterus in Perityphlitis.—Hollaender believes that the appearance of jaundice in the eye in the early stage of an acute appendicitis indicates with a certain probability a commencing, or an advanced, total necrosis of the appendix.

MILITARY SURGEON.

June, 1910.

1. Personal Experience during the Spanish-American War, Showing the Disadvantages of Depending upon Untrained Civilian Physicians for Military Service in Time of War; with Some Suggestions, By C. B. G. de Nancrede.
2. Field Service Hygiene, By Colonel Robert Smart.
3. Hookworm Disease and Pellagra, By Captain Henry J. Nichols.
4. Report on a Visit to India, By Henry C. Pillsbury.
5. A Report on Intestinal Parasites in Scout Companies, By Captain W. R. Eastman.
6. The Gastrodiscus Hominis in the Philippines. Report of a Case, with Introductory Helminthological Comment, By First Lieutenant A. D. Tuttle.

SOUTHERN CALIFORNIA PRACTITIONER.

June, 1910.

1. The Old Doctor—The Young Doctor—The Ideal Doctor, By J. Wilson Shiels.
2. Osteopathy—by an Osteopathist, By Dain L. Tasker.
3. Prevention of Measles, By L. M. Powers.
4. Ocular Injuries—with Special Reference to Sympathetic Ophthalmia, By B. F. Church.
5. Tonsillotomy—Is It a Proper Operation, By W. H. Roberts.
6. Diphtheria Bacilli—A Differential Stain, By D. C. Ragland

4. Sympathetic Ophthalmia.—Church states that the causative entity and how it acts, to produce sympathetic ophthalmia, is obscure. Any local cause that produces violent iridocyclitis in an eye more or less endangers the fellow eye to the same character of disease through sympathy. Penetrating wounds, involving the ciliary body, and those in which a foreign body remains in the eyeball are conditions especially to be feared. Eyes blind from suppurative processes have little tendency to cause sympathetic ophthalmia. Sympathetic irritation may be considered a benign affection, and has little tendency to pass into inflammation. It may develop many years after injury to the fellow eye and is quickly and permanently relieved by enucleating the offending organ. Sympathetic inflammation, as a rule, resists all treatment. Our greatest hope lies in the preventive measure of enucleating the eye which is likely to cause it and that procedure is not always successful. There is no time limit to the development of the disease, though that of greatest danger is three weeks to five months after injury to the fellow eye.

Proceedings of Societies.

AMERICAN SURGICAL ASSOCIATION.

Annual Meeting, held in Washington on May 3, 4, and 5, 1910.

The President, Dr. Rudolph Matas, of New Orleans, in the Chair.

(*Continued from page 48.*)

Congestion of the Lower Lobe of the Right Lung an Early Symptom in Appendicitis.—Dr. John B. Roberts, of Philadelphia, suggested in this paper the possibility of a secondary congestion of the lower part of the right lung being found in a considerable number of cases of acute appendicitis. He spoke of this condition being a possible aid in the diagnosis of acute appendicitis when the symptoms of the latter were not yet very definite. A point was made that this observation did not refer to secondary pleuritis and pulmonary involvement occurring in the late stages of appendicitis. Such inflammation from septic invasion secondary to advanced appendicitis was an entirely different process. The idea of the author evidently was that appendicitis and perhaps other intraabdominal inflammations might cause atelectasis of the right lung or a true congestion, because of the insufficient action of the diaphragm upon the right side. This spasm or immobility of the right side of the diaphragm he compared to the tonic spasm of the muscles overlying the appendix in the abdominal wall. It was, however, also suggested that the engorgement of the base of the right lung in cases of appendicitis might be due to a simultaneous infection of both the appendix and the lung by the pneumococcus or other invading organism. The well known fact that pneumonia was sometimes accompanied by pain and muscular rigidity in the right iliac fossa was mentioned, as was also the clinical observation that acute appendicitis might in its early stages give rise to pain in the right lower thoracic region. The early congestion of the right lung, which Dr. Roberts thought he had found in the early or initiatory stages of appendicitis, might also occur from inflammation of the gallbladder or cellulitis around the upper pole of the kidney. The paper referred to somewhat similar observations by other writers which seemed to confirm at least partially the correctness of the value of this new point in the diagnosis of appendicitis.

Vaccine Therapy as an Adjunct to Surgery.—Dr. John B. Deaver, Dr. John C. DaCosta, Jr., and Dr. D. B. Pfeiffer, of Philadelphia, presented a communication in which they said that there had been established at the German Hospital a special department of vaccine therapy. In addition to its well known and satisfactory use in suppurative affections of the skin and other forms of minor chronic infection, this treatment had been used as an adjunct in more severe surgical infective conditions. Vaccines did not prove of service in three cases of streptococcic septichæmia in which the treatment was begun late. Four patients with severe staphylococcic septichæmia recovered, improvement in each case beginning with the initiation of the vaccine treatment. Eight cases of severe septic intoxication without demonstrated bacteriæmia were treated by drainage and vaccines. Two of the patients were *in extremis* when the treatment was begun and died shortly afterward. The remainder recovered. Five of the cases were streptococcic infections. Improvement was also noted in a miscellaneous group of cases, comprising persistent sinuses, cystitis, thrombosis, etc. Not all cases, however, gave a definite response. The dose varied from 25,000,000 to 750,000,000. The sicker the patient and the less satisfactory the response, the smaller and less frequent should be the dose. Streptococcus also was used in smaller doses than staphylococcus.

Specific vaccine treatment in the authors' hands had not proved of benefit in the later stages of streptococcic septichæmia. Staphylococcic septichæmia had been treated with most favorable results at all stages. Septic intoxications without demonstrated blood invasion in a majority of the cases displayed general and local improvement under the use of vaccines if given early; the later the treatment, the less certain and satisfactory the result. Localized and persistent suppurating lesions were sometimes markedly benefited by vaccine. Surgical procedures for the relief of infectious conditions should be reinforced by vaccine treatment, which should be begun as early as was consistent with the case, and preferably by autogenous organisms. No hospital could be considered as fully equipped which was not prepared to supply this form of treatment in conjunction with established measures.

Therapy by Bacterins and Tuberculins in Mixed Suppurative Bone and Joint Disease.—Dr. De Forest Willard and Dr. B. A. Thomas, of Philadelphia, read an account of their experience of two years' duration in the treatment by bacterins and tuberculins of tuberculous bone and joint disease complicated by mixed pyogenic infections. The feature of the treatment consisted in the alternation of bacterin and tuberculin inoculations in the mixed suppurative type of the disease, such as spinal caries, tuberculous hip joint disease, etc. They did not contend that bacterin therapy was a "cure all," or that, when indications for surgical intervention existed, they could be disregarded and active immunization substituted. They wished, however, to emphasize the fact that the accessory employment of bacterin and tuberculin in certain cases stimulated the tissue cells of the organism to the production of specific antibodies to assist the bodily defenses in antagonizing and combating the given infections. On the other hand, the improper use of these measures would not only fail to effect cure, but would inevitably lead to disaster and thrust a therapeutic measure of worth into disrepute. Bacterins, particularly tuberculin, were more potent agents for evil than for good, unless wisely administered. They were invaluable aids in competent hands, and when they were so employed the patients did better than those treated without bacterins; their detention in the hospital was shortened, and complications, if they occurred, were fewer and less severe.

The authors presented two definite clinical types of disease, illustrated by charts, in which therapy

by bacterins and tuberculins was recommended. The first type was represented by the case in which already at the time of operation a mixed infection of hæmatogenous or exogenous origin had been superimposed upon suppurative tuberculous caries. The second type was manifested in the evacuation and drainage of a "cold abscess," in which case almost invariably, after a lapse of fifteen to twenty days, the temperature suddenly rose and symptoms of a mixed infection ensued. These types of disease were of a serious character, not those mild cases which would end in recovery after simple incision and evacuation, or those neglected ones of prolonged suppuration, characterized by bacteriæmia, grave sapræmia, and amyloid disease, but those with chronic localized processes, the treatment and prognosis of which had been greatly handicapped by the intervention of various pyogenic bacteria. The authors had found that in the course of weeks the various pathogenic bacteria isolated from the suppuration varied, and for that reason they insisted upon the employment of autogenous bacterins, the pus being cultured and recultured at least monthly. As soon as the patient's temperature fell to 100° F. or preferably lower, under the administration of bacterins, inoculations with tuberculins, either alone or alternating with bacterins for a time, were begun. They concluded, judging from the cases under their observation, that better results had attended the process of active immunization when, just as in tuberculin therapy pure and simple, the treatment had been begun with relatively small bacterial inoculations, progressively increased to the therapeutic limit, rather than by recourse to large doses, thereby in the former case establishing immunity, and in the latter avoiding anaphylaxis. Studious observations of the clinical symptomatology had always sufficed to control the treatment, the opsonic index proving not only impractical but unreliable.

Dr. J. M. T. Finney, of Baltimore, said in regard to the use of vaccines in chronic infections of the bladder from the colon bacillus, that he would mention a case in which, after every other method had failed, injections were followed by the most astonishing results, the bladder symptoms all practically disappearing.

Dr. Willis G. Macdonald, of Albany, called attention to the extreme importance of not giving too large a dose of vaccines, as he had found this regulation of the dose very troublesome in those cases.

Surgeon General Sternberg (retired), of Washington, said it was impossible to doubt that vaccine treatment was beneficial in a certain class of cases, but it was difficult to understand why it should be. There was a certain specific microorganism in the blood in large numbers, producing toxic products, and why the introduction of a comparatively small number of the same microorganisms under the skin should have such a potent effect in arresting the progress of the disease was to him inexplicable.

Dr. L. L. McArthur, of Chicago, called attention to the tuberculin treatment in essential hæmorrhage of the kidney. Treatment with the autogenous vaccine of the colon bacillus in several such cases had been productive of a cure, and he considered it a most beneficial treatment in this condition.

Dr. John B. Murphy, of Chicago, said that the essential hæmorrhage of the kidney and the essential hæmorrhage of the uterus occurring in girls under twenty with tuberculous histories responded marvellously to proper doses of tuberculin. Great assistance was rendered by this treatment in cases of bone tuberculosis. There was, however, no more treacherous and dangerous drug than tuberculin if improperly given. As a stimulant and as an aid in surgical tuberculosis, he knew of nothing so good when the treatment is carefully administered.

Dr. Joseph C. Bloodgood, of Baltimore, had had no experience in the vaccine treatment, but would like to suggest in regard to the essential hæmorrhage of the kidney that a more simple serum be tried first. The professor of pathology at Tufts College had demonstrated the rapidity with which blood serum of all animals would check hæmorrhage, so perhaps it was some antibody in the serum and not the organism that checked the hæmorrhage when tuberculin was used in these cases.

Dr. Joseph A. Blake, of New York, had been employing the vaccine treatment quite persistently, and in chronic infections had found the autogenous vaccines of great benefit.

Dr. Arthur Dean Bevan, of Chicago, said that, from his limited knowledge, he considered it too early at this time to arrive at any definite conclusions with regard to the value of this treatment. He had been particularly interested in the application of the vaccine treatment to tuberculosis of the kidney and mixed infection of tuberculosis of the colon, and, although he knew of cases which under good management with this treatment had gone on to recovery, he also knew of cases which had done the same without the vaccine treatment.

Dr. Francis B. Harrington, of Boston, had seen some cases in which autogenous vaccines had been of great benefit, and also some cases in which they were productive of great harm.

Dr. Harry M. Sherman, of San Francisco, said that they were using tuberculin more and more in the Children's Hospital. With regard to the vaccine treatment, they had had no success with the streptococcus infection.

Dr. Emmet Rixford, of San Francisco, mentioned a patient with tuberculous anal fistula, tuberculosis of the spinal cord, and tuberculosis of the wrist, who under treatment with tuberculin was completely restored to health. It had been two years since the treatment, there was now no sign of tuberculosis, and the patient had gained forty pounds in weight.

Dr. James E. Moore, of Minneapolis, had been disappointed in the serums for the treatment of acute infections. In tuberculous cases he had had better results. It was very essential that these treatments should be carried out only by those who knew how to use them.

Dr. Charles A. Powers, of Denver, said that in chronic infections, especially the chronic staphylococcic infections, the autogenous vaccines had not given him the encouraging results which many others had obtained, and he therefore attributed this to faulty methods.

Dr. Charles H. Mayo, of Rochester, Minn., said, in regard to the vaccine treatment, that he had had very little experience with it, but he had had one case of colon infection of the bladder and kidney in which the autogenous vaccine had proved of benefit.

Dr. John B. Deaver, of Philadelphia, thought the toxine treatment was most satisfactory if used judiciously. Like all good surgical measures, it must be instituted early to obtain the best result. The dose was most important and should be carefully studied and regulated to the individual case.

Dr. De Forest Willard, of Philadelphia, said there were four things to remember in the use of tuberculin. First, tuberculin was a potent agent for evil as well as for good. It must be used carefully and in careful hands. Second, if a stock vaccine was used by incompetent men the treatment would have disastrous results. Third, the dose must be exceedingly small, for the smaller the dose and the longer the time consumed in the treatment, the more certain the beneficial results. Fourth, it is by no means a substitute for surgical procedures.

The Ætiology of Cancer.—Dr. Isaac Levin, of New York, presented investigations based upon a clinical study of 4,000 cases of carcinoma and sarcoma collected from several large hospitals in the country, the analysis of which showed many results of interest. The greater frequency of the disease in women was due, he said, to the prevalence of cancer of the uterus and the female breast. The other organs became affected more frequently in men, which fact might be due only to the greater subjection of the latter sex to the different injurious influences of civilized life. Cancer, while considered to be a disease of advanced age, appeared, according to this investigation, to occur in many instances in people who have not yet reached middle age. Child bearing did not seem to have any direct connection with it. Another point of interest was the fact that American Indians rarely contracted the disease. The data on the influence of occupation in causing the disease were very defective and no conclusion could be derived from them. It was expected that with the cooperation of the profession better results would be obtained in this connection in the future. The presence of a preceding local disease in the organ affected with cancer, while of certain importance, could not be considered as the main ætiological factor. Hereditary disposition did not seem to have an influence upon the causation of the disease sufficient to warrant the great dread of the lay public for this hereditary trait.

In conclusion, the statement might be made that, while this investigation could not be said to have reached any final result in the elucidation of the ætiology of cancer, it appeared evident that a local trauma or previous disease of the affected organ was of less importance in the causation of cancer than the increased vulnerability and lessened resistance of the organism caused by the ever increasing strain of modern life. This was certainly the only explanation that might be offered for the increasing frequency of the occurrence of cancer in civilized communities. That this increase was not only apparent was very evident from the mortality statistics of the United States in 1907, which showed a ratio of 73.1 deaths from cancer per 100,000 population, as compared with the ratio of 70.8 in 1906.

Dr. Charles A. Powers, of Denver, called attention to the formerly prevalent idea that youth was a bar to carcinoma. During the past year he had had no fewer than three patients under twenty-four years of age suffering from epithelioma.

(To be concluded.)

Letters to the Editor.

ATROPINE AS A HÆMOSTATIC.

Bennett Medical College, Chicago, *June 20, 1910.*

To the Editor:

In Dr. Bandler's paper upon Uterine Bleeding, on page 1211, I note the following: "Other drugs which have been recommended are viburnum, hydrastis and hydrastine, apiol, atropine, thyreoid extract, etc. None of these have proved to be anything but an adjuvant to the other remedies already mentioned." I have repeatedly endeavored through the medium of the medical press to find cases of hæmorrhage in which atropine failed, but without success. I am encouraged by the quotation to hope that Professor Bandler can contribute some data along this line. Up to the present I have been unable to get a solitary report of the failure of atropine to control any species of hæmorrhage whatsoever, excepting that which comes from the opening of large arteries. I ask you to bring this to his notice either personally or through the medium of the Journal.

William F. Waugh.

Book Notices.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Medical Vademecum. In German and English. By B. Lewis. With Preface by Professor Dr. A. Politzer. First Edition. Vienna: B. Lewis; London: J. & A. Churchill; Leipsic and Stuttgart: K. F. Koehler; Philadelphia: P. Blakiston's Son & Co., 1910. Pp. xv-559. (Price, $5.)

It seems to be the intention in this book to make easy to German and English physicians the medical vocabulary of each others' languages. It is written in both languages, the left hand pages being in German and the right hand in English. It contains twenty-five medical essays; a long list of queries and answers such as may be used in the taking of histories of cases; and five laboratory reports.

It seems to be a very good textbook for the study of both languages, and will prove vastly more interesting than the perusal of Schiller's *Abfall der Niederlande*. The contributors to the essays belong to the staff of the Vienna University, and the postgraduate course at this university, which is visited

by so many American and English physicians, seems to have given the impetus to the publication. The book can be well recommended to our American physicians who are interested in the study of the German language and as a preparatory course in German before visiting the clinics of Austria and Germany.

Compte-rendu. Volume général, seizième congrès international de médecine. Budapest: Août—Septembre, 1909. Publié par le Prof. Dr. Emile de Grosz, secrétaire général du congrès. Budapest, 1910. Pp. xiii-481.

The Sixteenth International Congress has published its general report. The text is written in French, while the speeches and papers read appear in the languages in which they were delivered. Thus, we find Professor Musser's address, made by him as chairman of our national committee at the opening of the congress, and the address of Professor Thayer at the closing of the congress, in English. While looking over these addresses it is interesting to note that French was mostly used; next comes German, and then English; of the Italian representatives, one spoke in Latin (the only Latin address) and the other in Italian. It seems that neither Volapük nor Esperanto was used. Interesting is also the remark at the end of each speech *vifs applaudissements,* which stereotyped repetition is changed to *applaudissements prolongés* for the address of the French representative and the Latin address. Besides the official addresses, we find seven scientific papers: One in Italian, one in English (by Bashford, of London, on cancer), one in French, and four in German. The list of members and an index conclude the report.

Operative Chirurgie der Harnwege. Normale Anatomie und chirurgisch-pathologische Anatomie. Von J. Albarran, Professor für die Krankheiten der Harnwege an der medizinischen Fakultät zu Paris, Chirurg am Hospital Necker. Ins Deutsche übertragen von Dr. Emil Grunert, Spezialarzt für Chirurgie in Dresden. Erste Lieferung. Mit 132 teils farbigen Figuren im Text. Jena: Gustav Fischer, 1910. Pp. 320.

Professor Albarran's well known work *La Médecine opératoire des voies urinaires* appeared in 1909 and contained about a thousand pages. The German translation before us is entitled *erste Lieferung,* and, as it contains about three hundred pages, we suppose two more parts will appear. The translation seems to be well done, and the French has been rendered into idiomatic German.

The translation of such a work is not an easy undertaking, as the nomenclature, especially of anatomical designations, necessitates a very thorough knowledge of the subject. To avoid errors the translator has often given the French or Latin names. We hope that the time will not be so very far distant when we shall have a universal nomenclature.

The part before us contains the topographical, or, rather, surgical (chirurgische), anatomy of the kidney and the renal pelvis, and deals with operations on the kidney, such as nephropexy, nephrolithotomy, pyelotomy, nephrostomy, perinephritic abscess, the correction of the entrance of the ureter into the renal pelvis, extraperitoneal nephrectomy, etc.

MEDICOLITERARY NOTES

In the July *Harper's* Dr. W. W. Keen gives a popular description of The New Surgery, supplementing a previous article on the same subject contributed about a year ago.

* * *

Cabanès, in the fifth volume of his *Indiscrétions de l'histoire,* begins a sort of historical diagnosis of the case of Charles Quint with a few reflections on the epigram of Moreau of Tours that genius is a neurosis. He is disposed to think that the saying was due to professional narrowness on Moreau's part. Every individual, says Cabanès, from the specialist's standpoint, suffers from the disease in which he specializes; nothing is easier for a physician than to see only invalids on every side. Such diagnosis is popular. The *profanum vulgus* likes to think that great conquerors and social or political leaders suffer the same pains, undergo the same physical tortures as itself. Some humorist said that, although pity did not cure envy, it consoled us for suffering from it.

* * *

McClure's Magazine, which always contains matter of interest to the medical profession, is particularly rich therein in the July issue. The real hero of The Unparalleled Invasion, Jack London's blood-curdling fantasy, is Jacobus Laningdale, a laboratory pathologist; John Burroughs writes entertainingly of Animal Behavior and the New Psychology and ventures the statement that "zoos" like that in the Bronx may be amusing, but are not instructive; our colleague of the *Lancet,* Dr. R. Austin Freeman, tells how Dr. Thorndyke solved the mystery of The Aluminum Dagger.

* * *

In the July *Strand* there is a history of Gounod's *Faust,* which includes a story told by Gounod himself. When it was to be given in Rome an impresario wrote to the composer, saying that, as the ecclesiastical censor had prohibited the appearance of the devil on the stage, he could perhaps transform the character of Mephistopheles and make him "for instance, a physician."

* * *

There is an amusing but sane and philosophical editorial on women in the July *Scribner's,* in which the writer explains that maternity is of the essence of woman, not an accident or a fashion, and, therefore, that the race is not in danger on account of woman's present multifarious activities.

* * *

The *Red Book,* of Chicago, is now with 192 pages the largest illustrated fiction magazine in the world. The July issue has several pages devoted to plays so far produced only in Chicago. This is significant, for the United States is so huge as to require more than one metropolis. Even from a medical standpoint New York does not occupy the unique position in our country, of Paris, Berlin, and London in their respective lands.

Miscellany.

Report of the Committee for the Study of the Relation of Tuberculosis to Diseases of the Eye.—This committee was formed for the purpose of studying in a cooperative way the relation of tuberculosis to certain diseases of the eye, the ætiology of which is often obscure. Dr. William H. Wilder, as chairman of the committee, presented the report in the Section in Ophthalmology of the American Medical Association at St. Louis. The following is the summary as it appears in the *Journal of the American Medical Association,* of July 2d:

Six cases of chorioiditis, in four of which subcutaneous test gave a positive general reaction, with local reaction in the eye in two. Two cases of retinitis or chorioretinitis, in which tuberculin tests were negative.

In trying to arrive at some definite conclusions as to ætiology in a group of cases like the foregoing, one should consider carefully the relative value of the means and tests employed in the examination of such cases. If active tuberculosis is present or has been present in lungs, joints, or bones, sufficient to cause any marked changes, the condition may be discovered with all reasonable probability by careful physical examination. But if from ninety to ninety-eight per cent. of all persons who have reached sixty years of age have been at some time infected with tuberculosis, as is asserted, then very many have suffered so slightly as not to present signs of the disease that can be determined during life by our methods of physical examination.

If from ninety to ninety-five per cent. of all persons who have passed the adolescent period of life will respond actively to the sensitive cutaneous test of von Pirquet, as is stated, it helps to confirm the statements of the pathologists as to the ubiquitous nature of the disease. This being so, in a given case of eye disease, one could place little reliance on this test as determining the actual ætiology of the eye lesion without first positively excluding all other factors, and this is not always possible.

The same criticism would apply to the Calmette test which, on account of its danger in diseased conditions of the eye, one would hesitate to use for ophthalmic diagnosis, even if one eye is sound. Response to this test might prove, as is alleged, the existence of active tuberculosis in some part of the body, but would not necessarily determine the nature of the eye lesion.

In the test by subcutaneous injection of tuberculin, the same difficulties are encountered. A general reaction following this test would only prove that the individual is tuberculous (excluding syphilis, leprosy, actinomycosis), which might be done by the simple von Pirquet or Calmette test. If, however, a local reaction in the diseased eye occurs, manifested by ciliary injection, conjunctival redness, or marked aggravation of the previous condition, we have strong presumptive evidence that the lesion in the eye is tuberculous. But the eye may be so inflamed as to prevent us from observing whether or not there is increased reaction, so that the test, if made, should be made when the eye is in a comparatively quiet condition.

Again, this raises the important question whether such structures as the cornea, sclera, and uvea may not be thrown into a diseased condition by the toxic substances from the bacilli in a distant focus of tuberculosis, reaching them through the blood and lymph channels, without the presence of the microorganisms themselves in any part of the eye. This being the case, might we expect a local reaction in the eye, even if we encountered a general reaction with the subcutaneous test?

An interesting feature of this series of cases is the frequency of association of tuberculosis in some part of the body with eye conditions, such as phlyctenulosis, deep and interstitial keratitis (nonsyphilitic), and sclerokeratitis, and the frequency of local reaction in the eye in such cases, with the use of the subcutaneous test.

In fifty-nine cases of keratitis, episcleritis, cleritis, and sclerokeratitis, fifty-six gave positive evidence of being tuberculous, either by physical examination or tuberculin tests. In twenty-seven of these cases subcutaneous tests were made, and of these twenty-two were positive as to local reaction in the eye.

If it were possible to study all such cases that appear in a year or two in several large clinics or eye hospitals, we might arrive at some instructive conclusions as to the frequency of tuberculosis as a cause of such diseases.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of and deaths from cholera, smallpox, yellow fever, and plague have been reported to the surgeon general of the United States Public Health and Marine Hospital Service for the week ending July 1, 1910:

Place.	Date.	Cases.	Deaths.
Smallpox—United States.			
Alabama—Total for State	June 12-18	14	
Kansas—Total for State	Apr. 1-30	148	1
Louisiana—Total for State	June 12-18	20	
Maine—Total for State	May 1-31	1	
Maryland—Total for State	May 1-31	1	
Missouri—Total for State	June 12-18	4	
New York—Total for State	May 1-31	26	
North Carolina—Total for State	Mar. 1-May 31	995	7
Tennessee—Total for State	June 12-18	5	
Texas—General—Total for State	Apr. 1-May 31	5	2
Virginia—Total for State	June 12-18	1	
Smallpox—Foreign.			
Algeria—Bona	May 1-31	1	1
Australia—Victoria, general	Apr. 3-19	1	1
Austria—Galicia	May 29-June 4	3	
Brazil—Para	May 29-June 11	8	1
Canada—British Columbia—Fernie	June 12-18	1	
Canada—Nova Scotia—Halifax	June 14-20	2	
Canada—Nova Scotia—Pictou	June 12-18	2	1
Canada—Ontario—Toronto	June 5-11	1	
China—Canton	May 8-21	4	
China—Hongkong	May 8-14	1	
China—Nanking	May 7		Present
Egypt—General	Apr. 30-May 6	50	15
Egypt—Cairo	May 21-27	4	2
France—Paris	May 29-June 4	6	
Germany—General	May 29-June 11	9	
Great Britain—South Shields	May 22-June 4	4	1
India—Bombay	May 18-24		28
India—Kurrachee	May 15-21	5	
India—Madras	May 14-20		2
India—Rangoon	May 8-14		12
Italy—General	May 30-June 5	8	
Italy—Naples	May 30-June 5	18	1
Korea—Fusan	May 1-7	1	
Malta	May 22-28	1	
Mexico—Aguascalientes	June 5-11		7
Mexico—Mexico	May 15-21		1
Mexico—San Luis Potosi	May 29-June 4	2	1
Portugal—Lisbon	May 29-June 4	34	
Russia—Libau	May 30-June 5	32	1
Russia—Moscow	May 22-28	7	5
Russia—Odessa	May 22-June 4	28	3
Russia—Riga	May 29-June 4	5	
Russia—St. Petersburg	May 8-28	146	36
Spain—Barcelona	May 31-June 6		3
Spain—Cadiz	May 1-31		1
Cholera—Foreign.			
India—Calcutta	May 1-7		63
India—Rangoon	May 8-14		1
Java—Batavia	May 8-14	5	4
Java—Samarang	May 8-14	50	40
Java—Soerabaya	May 8-14	15	6
Yellow Fever—Foreign.			
Brazil—Manaos	May 30-June 4		1
Brazil—Para	May 30-June 11	11	7
Ecuador—Guayaquil	May 16-31	21	8
Gold Coast—Sekondi	May 1-27	8	8
Sierra Leone—Freetown	May 1-31	3	3
Plague—United States.			
California—San Benito County—Hollister	June 11		1
Plague—Foreign.			
Chile—Iquique	May 8-21	9	4
China—Hongkong	May 8-14	2	
Ecuador—Guayaquil	May 16-31	2	
India—Baluchistan	May 1-14	54	46
India—Bengal	May 1-14	626	567
India—Bombay	May 18-24		162
India—Bombay Presidency and Sind	May 1-14	985	868
India—Burma	May 1-14	348	340
India—Calcutta	May 1-7		75
India—Central India	May 1-14	9	7
India—Central provinces, including Berar	May 1-14	118	82
India—Hyderabad State	May 1-14	5	2
India—Kurrachee	May 15-21	60	60
India—Madras Presidency	May 1-14	38	15
India—Mysore State	May 1-14	18	12
India—Punjab	May 1-14	16,810	14,654

Place.	Date.	Cases.	Deaths.
India—Rajputana and Ajmer-Merwara	May 1-14	4,650	4,286
India—Rangoon	May 8-14		17
India—United provinces	May 1-14	3,660	3,445
Peru—Callao, department—Callao	May 19	1	
Trinidad—Port of Spain	May 15-21	1	1

Public Health and Marine Hospital Service:

Official list of changes in the stations and duties of commissioned and other officers of the United States Public Health and Marine Hospital Service for the seven days ending June 29, 1910:

ADAMS, X. F. B., Acting Assistant Surgeon. Granted four days' leave of absence from June 30, 1910.

BAHRENBURG, L. P. H., Passed Assistant Surgeon. Granted eighteen days' leave of absence from July 1, 1910.

BANKS, CHARLES E., Surgeon. Leave of absence granted for twelve days from June 12, 1910, amended to read ten days from June 15, 1910.

BIERMAN, C. H., Pharmacist. Relieved from duty at Portland, Me., and directed to proceed to Baltimore, Md., and report to the medical officer in command for duty and assignment to quarters.

BROOKS, S. D., Surgeon. Detailed to represent the Service at the meeting of the American Institute of Homœopathy, to be held in Los Angeles, Cal., July 11 to 15, 1910.

COBB, J. O., Surgeon. Granted seven days' leave of absence from June 26, 1910.

DUNCAN, W. A., Acting Assistant Surgeon. Granted twenty-eight days' leave of absence with pay and two days' leave of absence without pay from May 5, 1910.

ELDRIDGE, M. B., Pharmacist. Relieved from duty at Vineyard Haven, Mass., and directed to proceed to Portland, Me., and report to the medical officer in command for duty and assignment to quarters.

FAHEY, E. W., Acting Assistant Surgeon. Granted seven days' leave of absence from June 24, 1910.

GEDDINGS, H. D., Surgeon. Detailed to attend the First International Congress of Administrative Sciences to be held at Brussels, Belgium, July 28 to 31, 1910.

GIBSON, FRANK L., Pharmacist. Reassigned for duty in the Leprosy Investigation Station, effective April 16, 1910.

HERRING, R. A., Assistant Surgeon. Granted fourteen days' leave of absence from July 15, 1910.

HOLT, JOHN M., Passed Assistant Surgeon. Granted one day's leave of absence, June 19, 1910, and one day's leave of absence, June 26, 1910.

IRWIN, FAIRFAX, Surgeon. Leave of absence for one month and ten days from September 1, 1910, amended to read one month and ten days from September 15, 1910.

LLOYD, B. J., Passed Assistant Surgeon. Granted one month's leave of absence from June 20, 1910, on account of sickness.

LUMSDEN, L. L., Passed Assistant Surgeon. Reassigned for duty in the Hygienic Laboratory, effective June 27, 1910.

PARKER, THOMAS F., Acting Assistant Surgeon. Granted four months' leave of absence without pay from July 1, 1910.

SLOUGH, CHARLES, Pharmacist. Upon arrival of C. H. Bierman, Pharmacist, relieved from duty at Baltimore, Md., and directed to proceed to Pensacola Quarantine, Fla., and report to the acting assistant surgeon in charge for duty and assignment to quarters.

SPRATT, R. D., Passed Assistant Surgeon. Granted seven days' leave of absence from June 14, 1910, on account of sickness.

STANTON, J. G., Acting Assistant Surgeon. Granted four days' leave of absence from June 27, 1910.

STIMSON, A. M., Passed Assistant Surgeon. Reassigned for duty in the Hygienic Laboratory, effective June 29, 1910.

VON EZDORF, R. H., Passed Assistant Surgeon. Granted five days' leave of absence from June 28, 1910, on account of sickness.

WARREN, B. S., Passed Assistant Surgeon. Granted two months' leave of absence from July 5, 1910.

WASDIN, EUGENE, Surgeon. Granted one month's leave of absence from June 22, 1910, on account of sickness.

WELDON, WILLIAM A., Acting Assistant Surgeon. Granted thirty days' leave of absence from July 5, 1910.

WILSON, J. G., Acting Assistant Surgeon. Granted seven days' leave of absence from June 22, 1910, under paragraph 210, Service Regulations.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending July 2, 1910:

ALLEN, JOHN H., Major, Medical Corps. Left Fort Myer, Va., accompanying Headquarters Band and Troops A, B, and D, Fifteenth Cavalry, en route to Camp of Instruction, Gettysburg, Pa.

APPEL, AARON H., Colonel, Medical Corps. Detailed as Chief Surgeon of Camp of Instruction at the Fort D. A. Russell Target and Manœuvre Reservation, Wyo.

BARTLETT, COSAM J., Captain, Medical Corps. Ordered to Fort Banks, Mass., as member of examining board, to meet July 12, 1910.

BASTION, J. E., Lieutenant, Medical Corps. Left Walter Reed General Hospital, Takoma Park, D. C., with detachment of Hospital Corps Company C, en route to Camp of Instructions, Gettysburg, Pa.

BERRY, HARRY R., First Lieutenant, Medical Corps. Reported for duty at Camp J. M. Dickinson, Chicago, Ill.

BLANCHARD, R. M., Captain, Medical Corps. Reported for duty at Camp J. M. Dickinson, Chicago, Ill.

CARR, WILLIAM B., First Lieutenant, Medical Corps. Detailed a member of the examining board at Fort Monroe, Va., vice Captain George P. Peed, Medical Corps, relieved.

CRUM, WAYNE H., Lieutenant, Medical Reserve Corps. Ordered to Fort Ontario, N. Y., as member of examining board, to meet July 12, 1910.

DEMMER, C. C., First Lieutenant, Medical Corps. Left Fort Thomas, Ky., for duty at Camp of Instruction, Gettysburg, Pa.

GOSMAN, GEORGE H. R., Major, Medical Corps. Left Fort Barrancas, Fla., en route to Chickamauga Park, Ga., for duty at Camp of Instruction.

HALLETT, HARLEY J., Lieutenant, Medical Reserve Corps. Relieved from temporary duty at Fort Hamilton, N. Y., and ordered to return to Fort Totten, N. Y.

HARTNETT, E. H., Major, Medical Corps. Ordered to Fort Monroe, Va., for temporary duty.

HAVERKAMPF, G. W., Lieutenant, Medical Corps. Left Fort D. A. Russell, Wyo., with Company A, Hospital Corps, en route to military tournament, Chicago, Ill.; report arrival at Camp J. M. Dickinson, Chicago, Ill., for duty.

HILL, EBEN C., First Lieutenant, Medical Corps. Sick leave of absence further extended one month.

JOHNSON, HOWARD H., Captain, Medical Corps. Granted two months' leave of absence, to take effect on or about July 20, 1910.

JOHNSON, THOMAS H., Lieutenant, Medical Reserve Corps. Ordered from Fort Baker to Fort Mason, Cal., for temporary duty as post surgeon and attending surgeon Headquarters, Department of California, during illness of Captain Perry L. Boyer, Medical Corps, or until latter is relieved.

LOWE, THOMAS S., Lieutenant, Medical Reserve Corps. Ordered from Presidio of Monterey, Cal., to Atascadero, Cal., for temporary, relieving Contract Surgeon James W. Brownlie, Jr., who is directed to report to the chief surgeon of the Department, on June 30th, for annulment of contract.

LYNCH, EDWARD C., Lieutenant, Medical Reserve Corps. Left Omaha, Neb., en route to take station at Fort D. A. Russell, Wyo.

MARIETTA, SHELLEY U., Lieutenant, Medical Reserve Corps. With one sergeant and one private first class or private H. C., with one ambulance and necessary medical supplies, ordered from Fort Des Moines, Ia., by marching, to Iowa City, Ia., to participate in encampment of the Fifty-fourth Iowa Infantry, from July 18th to 27th.

MYERS, WILLIAM H., Lieutenant, Medical Reserve Corps. Ordered to Fort Screven, Ga., for duty, relieving First Lieutenant Fred T. Keyle, Medical Reserve Corps, who is ordered to Fort Munsfield, R. I., for duty, on expiration of leave.

NICHOLS, HENRY J., Captain, Medical Corps. Granted three months' leave of absence with permission to go beyond sea about July 1, 1910.

Owen, L. J., Captain, Medical Corps. Left Fort Benjamin Harrison, Indiana, en route to Camp J. M. Dickinson, Chicago, Ill.

Person, Elbert E., Major, Medical Corps. Reported for duty at Camp of Instruction, Gettysburg, Pa.

Reno, W. W., Major, Medical Corps. Left Fort McKinley, Me., en route to South Framingham, Mass., for duty as inspector instructor to Ambulance Company and Hospital Company, Massachusetts Militia.

Reynolds, Frederick P., Major, Medical Corps. Ordered to proceed from Fort Monroe, Va., to Kavner, N. Y., and report upon arrival to the senior instructor at the encampment of infantry officers, Third Brigade, State of New York, for duty delivering lectures on camp sanitation, etc.

Sanford, Joseph L., Lieutenant, Medical Reserve Corps. Granted leave of absence for four days, to take effect on or about July 5, 1910.

Sharpe, Herbert H., Lieutenant, Medical Reserve Corps. Assigned to permanent duty at Fort Niagara.

Sheep, William J., Medical Corps. Left Fort Myer, Va., accompanying Headquarters Second Battalion and Batteries E and F Third Field Artillery, to Camp of Instruction, Gettysburg, Pa.

Shook, Jay R., Major, Medical Corps. Ordered to Denver to take physical test.

Siler, Joseph F., Captain, Medical Corps. Ordered from New York City to Peoria, Ill., to study pellagra in connection with commission organized by the governor of Illinois.

Talbott, E. M., Captain, Medical Corps. Left Fort D. A. Russell, Wyo., with Company A, Hospital Corps, en route to military tournament, Chicago, Ill.

Taylor, Blair D., Colonel, Medical Corps. Left Atlanta, Ga., for duty as Chief Surgeon at the Camp of Instruction, Chickamauga Park, Ga.

Waterhouse, S. M., Major, Medical Corps. Left Fort Washington, Md., en route to Washington Barracks, D. C., for duty with Headquarters, and Companies A and D, First Battalion Engineers, to Camp of Instruction, at Gettysburg, Pa.

Wickline, William A., Captain, Medical Corps. Left Walter Reed General Hospital, Takoma Park, D. C., with detachment of Hospital Corps Company C, en route to Camp of Instructions, Gettysburg, Pa.

Williams, H. B., Lieutenant, Medical Reserve Corps. Left Camp Upton, Sparta, Wis., en route to military tournament, Chicago, Ill.; reported for duty at Camp J. M. Dickinson, Chicago, Ill.

Woodall, William P., Captain, Medical Corps. Reported for duty to temporary command of one half of Company A, Hospital Corps, at Target and Manœuvre Camps at Fort D. A. Russell, Wyo.

Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending July 2, 1910:

Baker, M. C., Assistant Surgeon. Detached from the naval recruiting station, Cincinnati, Ohio, and ordered to the naval training station, Newport, R. I.

Duhigg, J. T., Assistant Surgeon. Ordered to the naval recruiting station, Cincinnati, Ohio.

Dunn, H. A., Passed Assistant Surgeon. Ordered to duty at the Naval Medical School Hospital, Washington, D. C.

Garrison, H. A., Assistant Surgeon. Detached from the naval station, Guam, M. I., and ordered home to await orders.

Hoyt, R. E., Passed Assistant Surgeon. Ordered to the naval recruiting station, Buffalo, N. Y.

Jacoby, A. L., Acting Assistant Surgeon. Ordered to duty at the naval hospital, Newport, R. I.

Payne, J. H., Passed Assistant Surgeon. Having completed examination for promotion, ordered home to await orders.

Phillips, E. W., Assistant Surgeon. Detached from the naval hospital, New York, N. Y., and ordered to the *Marietta*.

Rennie, W. H., Passed Assistant Surgeon. Detached from the naval recruiting station, St. Louis, Mo., ordered home, and granted sick leave for three months.

Sellers, F. E., Passed Assistant Surgeon. Detached from duty at the naval station and the naval recruiting station, New Orleans, La., and ordered to the naval station, Guam, M. I.

Stepp, J., Passed Assistant Surgeon. Ordered to the *Wabash*.

Strite, C. E., Passed Assistant Surgeon. Discharged from treatment at the naval hospital, Las Animas, Colo., and ordered to Washington, D. C., for examination for retirement, and thence home to await orders.

Tolfree, H. M., Passed Assistant Surgeon. Ordered to the naval recruiting station, Cleveland, Ohio.

Wheeler, L. H., Passed Assistant Surgeon. Detached from the *Marietta* and ordered to the *Virginia*.

White, E. C., Passed Assistant Surgeon. Detached from the naval hospital, Newport, R. I., and ordered to the naval recruiting station, St. Louis, Mo.

Woodland, E. E., Acting Assistant Surgeon. Ordered to duty at the naval hospital, Philadelphia, Pa.

Births, Marriages, and Deaths.

Born.

Daly.—In New York, on Friday, June 17th, to Dr. Daniel J. Daly and Mrs. Daly, a son.

Little.—In Fort Adams, Newport, Rhode Island, on Thursday, June 23d, to Captain W. L. Little, Medical Corps, United States Army, and Mrs. Little, a son.

Married.

Boyd—Bulmer.—In Moncton, New Brunswick, Canada, on Wednesday, June 29th, Dr. William Ballantine Boyd, of New York, and Miss Ethel Elizabeth Gertrude Bulmer.

Laird—Gilpin.—In Westfield, New Jersey, on Saturday, June 18th, Dr. G. S. Laird and Miss Caroline E. Gilpin.

Died.

Beach.—In Boston, on Tuesday, June 28th, Dr. Henry Harris Aubrey Beach, aged sixty-seven years.

Bogert.—In Spring Valley, New York, on Saturday, June 25th, Dr. Albert O. Bogert, aged fifty-eight years.

Brockway.—In Clinton, New York, on Monday, July 4th, Dr. Asahel Norton Brockway, of New York, aged seventy-four years.

Chandler.—In Everett, Massachusetts, on Tuesday, June 23d, Dr. Frederick Emerson Chandler, aged fifty-two years.

Dodge.—In Fresno, California, on Wednesday, June 22d, Dr. Frank B. Dodge, of Mount Morris, New York, aged fifty-three years.

Downey.—In New Market, Maryland, on Thursday, June 23d, Dr. Jesse W. Downey, aged sixty-two years.

Huebner.—In Lancaster, Pennsylvania, on Monday, June 27th, Dr. O. T. Huebner, aged seventy-five years.

Johnson.—In Johnstown, New York, on Sunday, June 26th, Dr. William Lobdell Johnson, aged sixty-seven years.

Nunn.—In Savannah, Georgia, on Wednesday, June 29th, Dr. Richard Joseph Nunn, aged seventy-nine years.

Robinson.—In Pittsburgh, Pennsylvania, on Sunday, June 26th, Dr. Clifford Harvey Robinson, aged thirty-three years.

Southgate.—In Worcester, Massachusetts, on Saturday, June 25th, Dr. Alfred W. Southgate, aged thirty-one years.

Walrath.—In St. Paul, Minnesota, on Monday, June 20th, Dr. Belle M. Walrath, widow of the late Dr. H. S. Walrath, aged sixty-three years.

Warren.—In Boston, on Saturday, June 25th, Dr. Henry S. Warren, aged thirty-seven years.

Whittaker.—In Kansas City, Missouri, on Wednesday, June 22d, Dr. William J. Whittaker, aged sixty-nine years.

Wilhelm.—In South Bethlehem, Pennsylvania, on Thursday, June 23d, Dr. Eugene T. Wilhelm, aged sixty-one years.

Wingfield.—In Albemarle County, Virginia, on Monday, June 27th, Dr. Charles L. Wingfield.

Zellhoeffer.—In Brooklyn, on Wednesday, June 29th, Dr. Charles Zellhoeffer, aged sixty-five years.

New York Medical Journal

INCORPORATING THE

Philadelphia Medical Journal and The Medical News

A Weekly Review of Medicine, Established 1843.

VOL. XCII. No. 3. NEW YORK, JULY 16, 1910. WHOLE No. 1650.

Original Communications.

THROAT SYMPTOMS IN GENERAL DISEASES.

*Throat Symptoms of Syphilis.**

BY H. L. SWAIN, M. D.,
New Haven, Conn.,
Clinical Professor of Laryngology and Otology, Yale University.

Your attention is invited to the throat symptoms of the following general diseases: Syphilis including those diseased conditions with which it is most often confounded (excluding tuberculosis), tuberculosis, the exanthemata, and typhoid. My part in the discussion is to introduce the matter as a whole, and then venture to say something concerning the first subdivision. To undertake this task and at the same time to expect to say anything at all explicit on all parts of such a broad subject would be to detain you for hours instead of minutes. It would be also obviously impossible, in the time that I am before you, to detail all the symptoms which occur in the various parts of the throat in connection with syphilis. I shall therefore try to confine myself to a consideration of the lesions of the mouth and pharynx, omitting all except the most brief reference to anything outside of those parts which are readily accessible to the eye, thus excluding in a general way the nose, nasopharynx, and larynx. Still further to spare you who must sit and appear to be interested in what I say, it will take us quite far enough afield if I limit myself largely to the question of diagnosis of syphilis from the diseased conditions, other than those covered by the other speakers of the evening, which are most readily confounded with it, and even in view of the limitations already imposed upon myself, it would savor largely of patronizing to try to tell this audience about the usual forms of syphilitic manifestations in the throat.

If you discover in a rough dock hand in one of the downtown clinics of this great city the well known mucous patch or the deeper laid bone lesion of the hard palate, it takes but little thought to map out a line of treatment, for the diagnosis is like the handwriting on the wall. When, however, a lady, well known to you socially, appears to consult you with an ulceration on the palate or posterior pharyngeal wall where it is unusual for the simpler forms to appear, it is a vastly more delicate situation which confronts you, and you long to be able to rid yourself of the suspicion which arouses in your mind a flood of possibilities. Enough of a woman of the world so that the slightest inadvertence on your part, a question, or even a glance would reveal all that is passing in dramatic vividness before your mind, it causes you, if I may be allowed the expression, to sit up and take notice. You desire to spare her all unnecessary annoyance and pain, yet, as she may appear in your own home at any time, you are very anxious to know just what is going on. Without further dilating upon the serious details which your imagination readily pictures, is it not, however, just this which more frequently confronts us, viz., to diagnosticate an ulcerating lesion of the mouth and throat, and if possible to do it at a glance.

Given, then, an ulceration in any part of the mouth or throat, what may such a lesion be? It may be an original sore, the primary manifestation of syphilis; it may be a mucous patch; it may be a so called tertiary lesion; an inherited syphilis; a Vincent's ulceration; an aggravated canker sore; a tuberculous ulceration; a lupus, a so called noma; a cancer; a postexanthematous or postdiphtheritic ulceration; a pemphigus; a pemphiguslike ulcer following the grippe; a thrush; or a leucoplakia buccalis. It may be any one of these, according to the age of the patient and the existence of such characteristics as may be hereinafter defined, and one readily, if of an analytical turn of mind, recognizes that he mentally excludes this or that form of trouble according to the age of the subject, the frequency with which the manifestation appears, the location in which the lesion most often manifests itself, and the characteristics, number, and other objective appearances. He may use to help himself out microscopical examinations of some of the portions and contents of the sores; and lastly he is governed by the constitutional symptoms and history. Let us then follow this rule in speaking of the possibilities in any given case.

Age, for example, readily excludes some causes. In babies and young children thrush and canker (including the latter under the general term of stomatitis, which occurs at all ages) are the most frequent forms, but it must not be forgotten that lupus and inherited syphilis are also early in the field and produce the gravest of lesions, and are to be suspected if you are able from the history to exclude postscarlatinal and postdiphtheritic ulceration. At this same period one should bear in mind that the so called noma is liable to occur in the cheek, although fortunately most rarely.

From sixteen on to forty, excepting canker, we deal most often with one or the other form of

*Read before the Medical Society of the Greater City of New York at its December meeting.

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syphilis, Vincent's angina, tuberculosis, and lupus as secondary to facial lesions. From forty on we think of epithelioma, and need to be not unmindful of the possibility of pemphigus or the pemphigus-like ulcerations which sometimes occur in elderly subjects following la grippe. Leucoplakia may occur at any age but is more common in my judgment in male adults.

These rules, however, cannot be too rigidly applied. For instance, I was at one time utterly unable to say that, in a weak, bent, and decrepit elderly lady, nearly seventy years of age, certain lesions of the cheek, tongue, and palate were not syphilitic, and after numerous vain attempts at treatment, it was at last learned that she was an exclusive milk drinker, taking scarcely any other food, was in this sense also as well as mentally practically in her second childhood, and in keeping with the rest of the picture I found that what we had to deal with, and what I should have recognized immediately on sight, was really thrush. Proper diet and cleanliness did for her what it usually does for children in whom only this form of disease usually occurs. Then, to take an opposite case, a lad of eighteen years had a peculiar discharging sore, with raised edges and with portions of deep infiltration situated upon the posterior wall of the nasopharynx to the left of the middle. No venereal history existed, and it could be absolutely excluded. The glands of the neck were enlarged, and the patient suffered a large amount of pain. Every effort to make a satisfactory diagnosis failed, and in the course of time the glands of the neck became enormously enlarged and very hard with not the slightest suspicion of pus formation. Later still a large swelling appeared on the roof of the mouth which in time broke down the bone and made an ulceration through into the nose. Two or three months having elapsed since the patient was first seen, and pronounced cachexia having appeared, to help in coming to a diagnosis, one of the glands of the neck was removed under local anæsthesia, and report from two of the most distinguished pathologists of the country (Dr. Prudden, of New York and Dr. Welch, of Baltimore) pronounced it to be the secondary glandular enlargements such as follow epithelioma or carcinoma. What the original lesion was we were never able to determine, as autopsy was refused, but the patient succumbed to a general cachexia. And so illustrations might be made without number where exceptions are to be made to the general age limitations already mentioned.

To judge what a lesion might be from the question of frequency, fortunately many of these forms of ulceration can immediately be ruled out on account of their great rarity, provided only that you are careful in your consideration of the picture as presented. It is difficult to form any expression for the question of frequency. For instance, to say that a chancre occurs once in a hundred times could mean nothing unless you knew how often syphilis appeared in the throat. To say also that in an experience of twenty-five years you have only seen a thing three times, may not mean very much, owing to the peculiar way in which cases sometimes come bunched together. For instance, I had been in practice eighteen years without ever having seen a rhinolith. I then had three cases within two months, and in the succeeding seven years which have since elapsed have seen none. This means but little, unless you have an idea of how many patients I have carefully examined in that time. If, however, I tell you that I have the records of 17,000 private cases very carefully compiled, and have seen some thousands of other cases in the hospital and clinic, and then have seen among all these cases only three of rhinolith, a person is justified in assuming that such cases are rare. Therefore, assuming for the sake of argument that on the basis of 20,000 cases of which I have a fairly exact working knowledge, I say that I have only seen three cases of chancre of the throat in a period of twenty-five years, it is good enough evidence that it is rare.[1] Two of these were on the tonsil and one of the posterior pharyngeal wall; two chancres of the lips; two of cancer of the tonsil; five of the tongue; two of pemphigus; one as a part of a very marked general pemphigus which resulted fatally; two of the post-grippal ulceration of the tongue, and half a dozen cases of enlargement and erosion of the papillæ of the tongue which did not produce ulceration from the same cause; two of severe ulceration involving almost the whole of the posterior pharyngeal wall and lateral columns following scarlet fever, and one following diphtheria; excluding the larynx and epiglottis, only one of tuberculosis of the pharynx; three of lupus; three inherited syphilis in children of years not months with very great ulceration, as judged, however, by the scars rather than by the area actually involved at the time the patients were seen; two of marked leucoplakia not of syphilitic nature. This leaves the vast preponderance of sores or ulcerations, with regard to frequency, to canker, the mucous patch, the tertiary lesion, general stomatitis, and Vincent's angina, in about the order named. I have never seen a case of noma.

Judging by the location and number of ulcerations present, something may be deduced. Mucous patches occur all over the mouth frequently symmetrically and are exceedingly rarely present singly. Vincent's ulceration rarely occurs except upon the tonsils, and adjacent tongue, or gums. The deeper large ulcerations of syphilis occur on the tonsils, soft palate, gums, and posterior pharyngeal wall. The gummatous infiltrations occur largely upon the hard palate and include sometimes portions of the soft, a denudation of bone taking place over the area of original gummatous deposit and a sequestrum sometimes forming, as you all know, of considerable size, owing to the interference with the nutrition in a larger or smaller area of bone. Canker sores occur anywhere in the mouth and cheeks, but rarely upon the tonsils, soft palate, and pharynx. It is a singular fact that I have verified a great many times, that certain patients have the habit of having canker sores in atypical situations and almost always have them in these localities. Tuberculosis, as has been already stated, is rarely, in my experience, found in the mouth. Chancres in the mouth cavity, outside of the lips, usually affect the tonsils and tongue. Carcinoma, if one

[1] Keyes reports in 2,400 cases of syphilis only three of chancre of the tonsil and four of the tongue.

excludes the lips, occurs more frequently on the tongue; and epithelioma of the tonsil is infrequently recorded. Noma when it appears is usually on the cheek. A general stomatitis when of an aggravated type or a thrush may have isolated spots of ulceration in various portions of the cheek, gums, and tongue, but usually there is enough of the general trouble to have it perfectly clear that the ulcerations are but a part of the general manifestation. Leucoplakia occurs upon the tongue, of course, and sometimes occurs upon the cheek and gums. There is a distinct form of syphilitic inflammation of the gums which may be the only manifestation found in the mouth. Lupus when it occurs in the throat, in the young, as well as hereditary syphilis, is liable to affect the deeper portions of the pharynx and postpharyngeal wall and they produce the most atrocious scars of any form of ulceration with which I am familiar. The only way that I know to diagnosticate between these two forms of ulcer or betwen the scars which result from these two forms of ulceration is by the use of tuberculin.

As to appearance and perhaps character of the ulceration: The superficial mucous patch must be familiar to every one, being sometimes but the heaping up, apparently, of the epidermis in a loosened layer almost like the skin of a blister which may be rubbed away leaving the mucosa beneath practically intact save for its epithelial covering. These so called mucous patches are usually irregularly round in shape, are almost never single, and are frequently of the size of an old fashioned three cent piece. These sores can usually readily be distinguished by this covering which they have, from a canker sore, and like the latter and in keeping with other secondary manifestations disappear spontaneously. Canker sores are usually smaller; they are definite, irregularly roundish, often quite deep ulcerations, they may be single, or there may be the history of their coming in series, and from the fact that they are rarely found upon the soft palate, posterior pharyngeal wall, and tonsils, are often to be excluded when ulcerations in these regions are present. To define the exact appearances of a deep ulceration of the so called tertiary type when occurring upon the tonsil and not involving the soft palate, from an ulceration due to the fusiform bacillus of Vincent, is to me an impossibility. I have no doubt in my own mind that previous to my knowledge of the possibilities in the way of ulceration which the fusiform bacillus and spirillum of Vincent possess, I have undoubtedly called certain ulcerations which I have seen syphilis when they were not. This I conceive to be a very grave error, for, as you will think when I later express my views concerning the treatment of syphilis, to subject any one to such an ordeal when unnecessary is a gross imposition, especially when the diagnosis can be as readily made as nowadays is possible, in a very few minutes by the help of staining a smear and putting it under the microscope. Not every lesion may be definitely diagnosticated, as will come up in what I am to say in a few moments, but if one is careful to take the smear before he has applied a lot of medicaments to the ulceration, he can usually find a legion of fusiform bacilli to make his diagnosis absolutely certain as regards the causation of that particular ulcer. As to the appearance of an original syphilitic sore or chancre when seen upon the tonsil or posterior pharyngeal wall, I have no doubt that were I to see a case to-night I should be puzzled to make a diagnosis from one observation or from any description that could be made of its appearance. As distinguished from the tertiary sore, you would expect to find, as I discovered in one of my cases (which I diagnosticated, by the way, very readily as compared with the other) the raised infiltrated edges of the ulceration which does not appear to be very deep, and infiltration at the base, exactly as we see in chancre in other situations. Such a picture makes the diagnosis easy. In the other case in which the diagnosis was difficult, there was an ulceration on the lower part of the tonsil close down to the tongue which involved a little of the anterior pillar, and as the patient had a bad cough at that time, my first diagnosis was tuberculosis. After three attempts to discover the tubercle bacillus in the sputum, and finding no lesions in the lungs, I felt at liberty to exclude tuberculosis. The patient asserted that she had often been troubled with aggravated canker sores, and some time was wasted here. Inquiry failed to reveal that there were any so called secondary lesions upon the skin or any other part of the body. The sore had existed there for some two months, but it seemed that the only thing to do to make a diagnosis was to give mercury, and a prompt response to treatment followed. I think I can safely add to this statement that where an ulceration on the tonsil involves the tissues of the soft palate with equal readiness with the tonsil tissue itself, that it usually is not a Vincent's ulceration. Even the aggravated forms of Vincent's angina which frequently appear, tend to destroy loose tissue, friable tissue, and avoid the denser ones.

Vincent's angina is by no means always the simple disease which one has perhaps been led to expect, responding as it sometimes does to proper treatment very readily. As Dr. Arrowsmith, of Brooklyn, and others, have written, perhaps to the knowledge of many of you present, serious cases of Vincent's ulceration come to pass which in severity and fatal outcome simulate the noma of childhood or the cancer of adult life. For instance, I had a case where a large ulceration of the tonsil was present when the patient came to see me. It had what is rather more characteristic of the Vincent angina than of any other sort I have ever seen, a large slough in the centre of the sore. I think I have never seen this in any chancre or epithelioma. Removal of this mass and a specimen taken from it told positively that we had to deal with a Vincent's angina; but treatment did not control it. In spite of the utmost care of the case by the attending physician (the patient living out of town) and the advice that I could give, and the treatment that I myself on various occasions applied, the ulceration proceeded steadily to slough away the entire tonsil, went into the triangular space which lies above and behind the tonsil, in which there is not a great deal of solid tissue, and ulcerated that away, dissecting the muscles out as clean as though

scraped with a knife on the dissecting table. It then went outward toward the ear, between the muscles, and downward around the big vessels of the neck to an appalling extent. The patient had marked cachexia, and was still further weakened by small hæmorrhages, and finally died, perhaps from lack of nutrition, for she became utterly unable to swallow food, and perhaps from the general cachexia, as we see with cancer. And yet, so far as I am able to inform myself, the cause of this whole affair was a very virulent type of fusiform bacillus.

It may be well to add that the general conditions which surround a case of well marked Vincent's ulceration of the throat are in other ways very similar to those of syphilis, because the glands in the neck are usually very much enlarged, and in some cases they even seem to be involved on the side opposite from the ulceration proper, which of course lends credence to the belief that it may be syphilis.

Another form which I have very frequently observed in syphilis, viz., an ulceration back of and around wisdom teeth with a spongy gingivitis extending along the gums on one or both jaws, has been exactly duplicated by a similar manifestation where the cause was the fusiform bacillus of Vincent.

Aside from such cases as I have just mentioned where the ulceration may occur around more than one tooth or more than one portion of the gums, Vincent's angina distinguishes itself from the mucous patch in the fact that it is almost always, in the case of the tonsils, a single sore. I have had three cases, however, in which there were multiple sores on both tonsils; so that on the score of being single ulcerations and persisting in one spot and not leaving it, which is often diagnostic of the tertiary sore of syphilis, one cannot make a diagnosis.

An epithelioma of the tonsil which I once saw, years before we knew anything about the fusiform bacillus, gave me the impression of its being a primary sore, resembling in an extraordinary degree one which I had previously observed, only that there was much shooting pain toward the ear. The only thing against it was the fact that the man was seventy years old and, I knew from personal experience, of most exemplary habits. He, however, did smoke very freely, and was not always particular whose pipe he smoked. Consequently, it was with a good deal of interest that we administered antisyphilitic remedies, hoping thereby to come to a diagnosis, and found to our sorrow that it was a case of epithelioma, which ran the usual course. Being in this location and involving as it did the tonsil, anterior pillar, and adjacent region of the tongue when I first discovered it, rendered it absolutely inoperable. The microscopic findings in this and the other epithelioma which I had were most unsatisfactory probably because it was difficult to get the masses large enough from the ulcerated surface, there being in neither case much proliferation of the tissue. To wait for a therapeutic test takes time which may be most valuable for operation.

The location and appearance of a primary sore which I found upon the posterior pharyngeal wall in a nurse occurred many years before, and was very similar in every way to the case which I have already described briefly under the head of epithelioma or carcinoma in a young man of seventeen to eighteen years old. The nurse acquired her original sore, the diagnosis of which was quite difficult but was finally made by the treatment, by an act of gross carelessness on her part. She had charge of a syphilitic child, and she must have acquired the disease by taking into her own mouth the nipple of the nursing bottle which had become clogged and sucking the openings free of caked material, then giving it back to the child. She remembered that she had thoughtlessly done this on two occasions, and it seemed that that must have been the exact cause of the infection in her particular case.

Concerning the appearance of the bone lesions on the palate which follow deposits in the periosteum, whenever one finds two or three small fistulæ leading down through a thickened membrane and other tissues to the bone and discovers rough bone at the bottom of these narrow tracts, one should be extremely suspicious of the tertiary bone lesion, the favorite site being at the top of the highest point of the arch of the palate usually exactly in its middle. Here I am rather inclined to believe in the idea that I have heard expressed by Dr. Bosworth, of New York, that the amount of bone which dies is in exact proportion to the amount of original deposit of gummatous matter. We have all of us observed that a very definite amount of bone dies and that our antisyphilitic treatment apparently does not seem to stop or lessen it at all. This occurs because the gummatous deposit cuts off the nutriment from the bone, and the portion supplied by the vessels thus cut off must necessarily die. One often wonders when he sees a round hole in a hard palate and also in the soft creating a grossly apparent defect whether there is any cause other than syphilis which would produce a definite given defect of the type suggested. As far as I am able to say I know of none, unless it is trauma or the burn of caustic potash or similar substance. This of course applies to an adult who previously possessed normal palate and normal anatomical details, and does not apply in the slightest degree to cleft palate and other similar inherited defects.

Scars sometimes come on the postpharyngeal wall which involve the whole surface including the posterior pillars of the palate of both sides all the way across. Occasionally the whole soft palate is adherent to the posterior pharyngeal scar so that the opening into the nasopharynx may be absolutely wanting, or exists as a small pin hole, or perhaps of the size of the finger, with the uvula entirely gone. These are usually the result of syphilitic ulceration; but bear in mind that they have been known to result from lupus, and in three instances to my knowledge they occurred as the result of postscarlatinal ulceration and postdiphtheritic ulceration.

The greatest difference exists in the question of sensitiveness. One of the largest ulcerations that I ever saw, in a very large, well developed man with an exceedingly deep and roomy pharynx, included half of the soft palate from the base of the uvula on one side way over to the pillars of the palate on the other, involved the lateral column of the pharynx, down to the level of the larynx and

above to the level of the soft palate and up to the lower lip of the Eustachian tube. All this one grand ulcerated surface, and yet the patient complained of no pain on swallowing and only the slightest trouble resulting from getting his food up into the nose. On the other hand I have known a small tertiary sore, owing to the difficulty in swallowing from swelling and painfulness, to have reduced the patient to a cachectic condition which simulated the last stages of tuberculosis, which diagnosis had been made and the open air treatment done to a finality. All this from a sore that was not as large as your finger nail and whose depth, at its deepest portion, was less than one eighth of an inch. This illustrates two things: First, the persistency of the syphilitic sore in one spot there never having been nor never occurring, to my knowledge, any other sore in the nose or throat, and the very opposite condition of which I spoke as to sensitiveness. The diagnosis in both these cases was very readily made by the aid of antisyphilitic treatment.

And now just a word as to some things other than objective appearances which we have to help us in diagnosis. Of course we have all known for years that we can obtain from tuberculous ulcerations the tubercle bacillus and feel pretty sure as to what we have found. However, we cannot by any means always rule out tuberculosis because we do not find the bacillus, and in such cases it is perfectly right and proper to use one or the other of the cutaneous reactions which are now perfectly legitimately applied and the limitations of which are perfectly well recognized, or to give a very mild injection of tuberculin. This I have done on a number of occasions in dealing with scars where I wished to know whether it was a lupus or a syphilis, and the reaction did not fail me, a most beautiful blush occurring at the time of the reaction period which came from the injection of an exceedingly mild dose of tuberculin. In these days the tuberculin injection can be looked upon as not only not dangerous, but if well directed, salutary to your patient.

As to syphilis, can we find anything by microscopical investigation? I have not yet been able to receive any great satisfaction from the search for the *Spirochæta pallida*. Not that this experience is universal; it is simply a result of my own trial.

As to Wassermann's reaction or the simpler form suggested by Noguchi a great many cases are now at our command, and the exceptions to the positive reactions are not numerous. In fact it is most eminently to be relied upon when you are in a position to have it made by reliable hands.

Dr. Fox, of New York, tells me that well developed Wassermann's reaction occurs in leprosy, he having got it in twelve out of fifteen cases of well developed, pronounced leprosy. This is, however, not a serious indictment. In trying to make a diagnosis of syphilis by microscopical section little help is obtained; even sections of gummatous material are so little characteristic that they have to be at their very best in order for the pathologist to be willing to say from microscopical appearances alone that a given specimen is surely a syphilitic type. I myself have spent hours and hours in search of Lustgarten's bacillus in one or another form of tissue in which I have undertaken to find it, and can from my own experience add a mite to that of others, that I do not believe in it; certainly not as a help to diagnosis.

The microscope will also help as before mentioned in distinguishing epithelioma but its negative finding we cannot implicitly trust. Concerning the finding of the fusiform bacillus in an ulceration or of the oidicum albicans in thrush, this is often very readily done. In some cases of Vincent's ulceration the smear is absolutely nothing but a pure culture of fusiform bacillus mixed with spirilla, so characteristic when once seen that no one need feel at all diffident in relying upon their own ability to recognize it whenever met. On the other hand, as I have already said, if the ulceration has been tampered with before you see it, by various applications which have more or less stirred up the ulceration, you may not find it at all, even after quite diligent search. If you can discover in any of the ulcerations certain peculiar necrotic masses which are usually present material taken from them will invariably show the bacillus.

The threads of the various forms of mould that one finds in stomatitis and also in some canker sores are sufficiently characteristic that we group them together as a fungus disease due to one or the other form of the mould, the threads of leptothrix being of course most often present.

Often in spite of the optimism of what has gone before or because we do not care to probe too deeply into the past history of the patient, we are driven to the stern necessity of arriving at a diagnosis by therapeutic exclusion. Without enlarging upon the point, very much may be learned by carefully studying the general history and constitutional symptoms. This is too evident to need more than mention but even granting this we must often as a final act, give enough of antisyphilitic medication to rule out the disease. This should be more seldom done as we arrive at a more perfect conception of the virtue of serum reactions.

Then a word as to treatment and I am done. First, the treatment of syphilis itself. With all deference and all credit to the advances that have been made in the modern conception of the best treatment for syphilis, I still cling fondly to my old ideas, as learned at first hand in the clinics of Europe and as they have proved of value in the many years since elapsed. I believe there is no other way to salvation except through the most faithful adherence to those rules when applicable, and the rule has been always through all my experience that there must be enough of the medicament, whatever form of mercury it may be, administered to the patient to control his lesions. That if he has come with a mucous patch in his throat, he should take enough medicine so that after all mucous patches disappear, no other lesions of syphilis will ever reappear again. If he is taking sufficient medicine to control the symptoms, he is to continue at that dose for a year. At the end of the year he is then put, for three months, upon the iodide of potash in liberal doses. Whenever it is needed iron or other tonics must be used. If he can supplement this with a visit to the hot baths of Arkansas or Virginia, so much the better. At the end of this

period of the treatment with potassium iodide, he has again a three months' treatment with the form of mercury to which he best responded, and this may be again followed by a course of potassium iodide. If at the end of three years he has had no return of symptoms in any way, he may consider himself cured. Such cured patients of mine have lived up to what I consider the supreme test of all except that of time, i. e., they have married and have begotten healthy children. No other method of treatment has ever been satisfactory to me, and I say here what I have said and thought many times, that it is one of the opprobriums of our profession the careless way in which syphilis is treated. Patients are given entirely inadequate amounts of mercury, which merely obscure the diagnosis and never properly subdue the disease. These are they who later develop the cerebral lesions and scleroses.

There are certain instances where it is idle to put patients through such prolonged treatment when they are not responding, and in them I believe that the hypodermic or intramuscular treatment has its unquestioned field of usefulness. And by those who know how to use it I have not the slightest doubt that results can be achieved by a much less prolonged watchfulness than I have indicated.

One thing more I would like to add to the above, and that is that in the experience which I have had with the class of people who come to me, the red iodide of mercury, in lesions of the mucous membranes is the sheet anchor and the one thing upon which I rely.

All this may be somewhat at variance with the views of many of you present, but it certainly is the obvious deduction of my own experience.

Now as to the local treatment of the lesions as they appear in the mouth and throat. One certainly can aid in the curing up of mucous patches and of superficial ulcerations by applying various medicaments. Preferably, if it is sure the lesion is syphilitic, the bichloride solutions may be used; 1 to 200 or 1 to 250 being caustic to mucous membranes. can be applied and will cause the ulcer to heal up with rapidity, especially if one is giving the proper treatment internally.

By chance I once applied a ten per cent. zinc chloride solution to a Vincent's ulceration, and it healed up so promptly and so exquisitely that I have used it ever since, and as it happened to be one of my earliest cases, I have used it almost to the exclusion of other remedies. I do not know but that there are other things which will work equally well, but except in the case which was so very malignant, it has always succeeded. I generally clean the ulceration out with full strength peroxide and then apply the ten per cent. solution of zinc chloride very thoroughly to every accessible spot. The patient of course is made to gargle weak peroxide solutions, following it with one or another form of alkaline gargle. Nothing seems so good for canker sores as pure stick of silver nitrate. For shrinking up the gums or the relaxed mucous membranes which follow the healing of ulcerations, old fashioned tincture of myrrh still holds a strong place in my affections. Glyceride of tannin helps many a stomatitis in its final healing. Large areas in the pharynx when productive of great dysphagia or odynophagia can be successfully anæsthetized by solutions of alypin when combined with adrenalin solution and the anæsthetic period much prolonged by insufflation of orthoform. Cocaine should never be used continuously by the patient for reasons well known to all of you. For a bland application to irritated areas not ulcerated a solution of boroglyceride certainly deserves our confidence.

Concerning the care of gross syphilitic defects as they appear in the hard and soft palate, it must, of course, be a cardinal rule to get the greatest possible effect from the antisyphilitic medication in the shortest time possible, so as to limit defects. In the case of bone death, let the dead be separated from the living by natural processes, for surgery generally botches the job and rarely hurries the final healing. Caustics rarely do good and often do harm to tertiary lesions. In the case of the pharynx and palate too great care cannot be used to prevent the inevitable contraction of scar tissue with obliteration more or less complete of the opening down into the nasopharynx and below into the œsophagus.

The greatest asset which we can have in handling the syphilitic and the one which it is often the hardest to obtain is the loyal adherence of the patient to the long period of treatment and to any one physician.

232 York Street.

SOME SURGICAL ASPECTS OF GASTRIC ULCER.*

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The subject is so large that it will not be possible, in a brief paper, to touch upon more than a few of the surgical aspects of gastric ulcer.

In this paper we shall take no account of the acute gastric ulcers which occur principally in anæmic young women. These ulcers are superficial in their situation, acute in their character, and heal under proper hygienic and dietetic treatment. They may be termed medical, as distinguished from the surgical ulcers of the stomach.

Our consideration will be directed toward the other class of ulcers, which may and should be termed surgical, because they do not tend to a permanent cure under medical treatment. They are deeply seated chronic ulcers, which are prone to persist or recur, and they play so much havoc with the human race and are the cause of so much hitherto unrecognized ill that we must welcome all the light that has been thrown on their nature.

Nearly all we know of practical importance concerning gastric ulcer has been acquired within the last decade. Rodman very wisely said: "It would be fortunate if everything written on the subject of gastric diseases, prior to ten years ago, could be obliterated, for while there was much truth, there

*Read before the Society of Alumni of Bellevue Hospital, January 6, 1909.

was more error in the literature before the time when the stomach fell under the domain of the surgeon, and its several lesions were inspected and finally submitted to the microscope."

During the last few years gastric surgery has been one of the most active fields of work, and today we stand in a pretty firm position. To quote Mayo: "The surgical invasion of the upper abdominal region has gradually enabled us to replace theory with fact, and fallacious clinical observations have given way before actual demonstration."

Ulcers of the stomach and of the duodenum are so closely allied anatomically and clinically that they may be considered under one head. Surgical gastric ulcer (the chronic ulcer) is more common in men than in women. In Mayo's experience sixty-one per cent. of duodenal ulcers occurred in males. He deems the cause of duodenal ulcer to be the impact of the acid chyme on the mucous membrane. When this chyme has been neutralized by the alkaline juices of the duodenum it ceases to produce irritation. Mayo shows that, owing to anatomical formation, the alkaline juices reach a higher level in females than in males, hence the lesser number of duodenal ulcers in females.

Let us now consider some of the dangers, immediate and remote, of gastric ulcers, and the reasons why they also should be promptly cured, for all gastric and duodenal ulcers should be recognized and all should be cured. No case of chronic indigestion or dyspepsia should be allowed to pursue an uninterrupted course. Chronic indigestion is not a normal condition. If the internist cannot cure such a patient, he should turn him over to the surgeon. Of course, it should be determined that the case is not one of merely functional disorder. The disturbance may be due to such causes as improper diet, bad modes and methods of eating, general fatigue, and especially, neurasthenia. These conditions should be carefully considered and eliminated by proper regulation of the patient's hygiene before we subject him to operation. The hygienic and dietetic treatment should not be pursued too long if it is not successful. If a cure is not brought about within three or four weeks, the case should be considered a surgical one. Of course, in many instances, gastric ulcer may be very much relieved by a dietetic treatment, but relief is not enough. Cure is demanded, and if a recurrence takes place, surgical aid should be invoked.

It must be difficult to determine the mortality of unoperated ulcer. The statistics of five hundred cases, treated at the London Hospital, showed that fifty per cent. were uncured by medical means, and of those discharged as cured one half relapsed. Doubtless the mortality in these cases treated medically would reach beyond fifty per cent. The majority of patients do not die from the immediate effects of the ulcer, but the consequent anæmia and starvation so reduce their vital forces, that they become a ready prey to intercurrent diseases.

The most prominent dangers of gastric ulcer *per se* are hæmorrhage, perforation, deformities of the stomach, resulting in obstruction, etc., and cancer.

Hæmorrhage: In the majority of cases hæmorrhage is a marked symptom of gastric ulcer. It frequently depends on ulceration through a vessel of considerable size, and while it may spontaneously cease, it is almost sure to be recurrent and, of course, it becomes a very grave and menacing complication. Often it will be unwise or impracticable to operate for gastric hæmorrhage during its occurrence, but the danger of repetition should be borne in mind and should be prevented by operation as soon as the patient has sufficiently regained his strength.

Perforation: Perforation occurs in a very large proportion of cases. Mayo reports sixty-six in 272 cases of duodenal ulcers. The perforation may be acute, in which case the contents of the stomach or duodenum escape into the abdominal cavity with well known baneful results. It may be subacute with the formation of abscess, that is to say, as in appendicitis, it may have taken place slowly with surrounding adhesions and plastic protection, so that general peritonitis does not result, unless the abscess ruptures. Of course such a case will require a complicated operation for the treatment of the abscess, and for the closure of the opening. Perforation may be chronic; in these cases the perforation is partial and attended by plastic exudations and protection. These cases will present a very wide range of symptoms and conditions.

Deformities of the stomach: Deformities of the stomach resulting from chronic ulceration are largely due to contraction, and the symptoms are principally due to the resulting obstruction and interference with the functions of the stomach.

Cancer: One third of the cases of human cancer are found in the stomach. One of the most important points, added to our knowledge in the last few years, is the fact that cancer of the stomach is preceded by gastric ulcer in the majority of cases. Eighty per cent. of stomach cancers occur in the pyloric end, while ninety per cent. of stomach ulcers occur in this situation. The experience of keen observers has shown that in about sixty per cent. cancer of the stomach develops in a preexisting ulcer, or on the site of a cicatrix of an ulcer which has healed. So significant are these facts that we may consider ulcer as the precancerous stage of gastric carcinoma. Of course, it should not be inferred that we think that the majority of gastric ulcers result in cancer, but that a large proportion of them do.

Cancer of the stomach should be as curable as cancer of the breast, but unfortunately it is usually neglected until a period when cure is out of the question. It has been our habit in the past to wait too long for a diagnosis. It is conceded that when cancer of the stomach can be positively diagnosticated, it is too late to expect a cure by operation; therefore we are brought to the position that cancer of the stomach should be prevented, in other words, we should operate in the precancerous stage, namely, during the period of precancerous ulcer.

Before the disease is far advanced there is no distinction to be made between a benign ulcer of the stomach and a carcinoma. In fact the ulcer, in the nature of things, may produce much more violent and active symptoms than does an early cancer. We have read many papers on the early diagnosis of cancer; papers written by able and

scientific men,—all that may be learned from these papers is that it is impossible to diagnosticate cancer during its early stages. The laboratory and clinical tests are fallacious and misleading and are not to be depended upon. One medical authority, whom I lately heard speak on the subject, strongly inveighed against the surgeon. He urged his fellow internists not to permit the surgeon to make exploratory laparotomy, with the view of determining the nature of the disease. In this paper he set forth these propositions very clearly: (a) That neither he nor anyone could make a diagnosis of gastric cancer in its early stage. (b) That to be effective and curative, operations should be done in the very earliest stages. (c) That when a tumor could be felt, or when the case had so far progressed that a positive diagnosis could be made by the symptoms and findings, operation was useless. (d) That we should never operate until we had made a positive diagnosis. Think of the absurdity!

I wish to make a plea for exploratory laparotomy in these cases. If properly done it will result in no harm, and if often resorted to it will result in the saving of countless lives. Remember that chronic indigestion and dyspepsia are not normal conditions of health. Remember that if they are merely functional in character, we should be able to cure them in a very short time by proper regulation and treatment. Remember that if we cannot promptly cure such a case, we should assume that it is dependent upon a lesion which may have the most disastrous results. Remember that modern methods have reduced the mortality to a point where operation should no longer be dreaded. (Mayo showed less than one per cent. mortality in over three hundred gastroenterostomies. And remember that chronic ulcer of the stomach and duodenum treated medically result in a mortality we cannot estimate, but which we know to be over fifty per cent.

I am a great believer in exploratory laparotomy. I feel that we surgeons should be more fearless in expressing ourselves in this matter; we often hesitate to acknowledge to patients that we are not sure of our diagnosis, and yet the truth of the matter is that we should never be sure of a diagnosis of intraabdominal conditions, and we should never open the abdomen with our minds definitely made up. We should always be prepared to find an entirely different state of affairs from that indicated by prominent symptoms.

Of course we should not operate on a patient without good and sufficient reasons, but incurable gastric symptoms constitute a good and sufficient reason for operating. The case may be one of ulcer about to perforate; it may be one of ulcer leading on to cancer or to a serious deformity of the stomach; or it may be a case of early and curable cancer: On the other hand it may not be a gastric case at all; it may be a case of gallstones; or it may be a case of appendicitis with referred symptoms.

It is a fully established rule that we should open the abdomen in cases of severe injury, if there are the slightest symptoms of a rupture of a hollow or solid organ; we should not wait to be sure that there is a perforation or hæmorrhage, but we should give the patient the benefit of the doubt by an early exploration. Now this same rule is surely applicable to the more chronic abdominal lesions. Of course we should try hygienic and dietetic means of cure, but failing in those, we should resort to surgery, both for purposes of diagnosis and purposes of treatment. For we should know what is the matter with the patient, and we should cure him.

It is not within the scope of this paper nor the intent of the author to describe the technique of operative methods, but a word should be said as to the plan and intent of surgical treatment. The majority of American surgeons feel that gastroenterostomy is the operation of choice, and that it will result in permanent cure in nearly all cases. William Rodman is our strongest advocate of a more radical procedure, and his arguments in favor of resecting the ulcer bearing area are too logical to be neglected. In that way only are we sure of preventing recurrent hæmorrhage; in that way only can we be sure to avoid postoperative perforation; in that way only are we sure of avoiding the implantation of cancer on an ulcer's cicatrix.

In closing, let us pay a tribute to the excellent work that has been done in this most important field of surgery, and let us be inspired and stimulated to further endeavor, that by cooperation we physicians and surgeons may aid in limiting and reducing this very potent cause of human suffering.

540 Park Avenue.

TORSION OF THE EYEBALL.*

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In the winter of 1905, following the footsteps of Meissner and Maddox, I read a paper before this society advocating the theory of diversity of axes for the superior and inferior oblique muscles of the eye instead of community of axes; also diversity, instead of community, of axes for the superior and inferior recti. I further stated in this paper that the facts of clinical experience demand the hypothesis of tilted axes (diversity of axes); for this experience teaches that simple, uncomplicated paralysis of, say, the right superior rectus, when the left eye is in the primary position, leads not only to subduction (caudoversion), and extorsion (dextrotorsion), but also to abduction (dextroversion) and therefore to crossed diplopia. On the contrary, if the superior rectus rotated upon a horizontal axis common to the inferior rectus, the simple paralysis of the superior rectus would lead to adduction (sinistroversion) and homonymous diplopia which is not in accordance with clinical experience.

Furthermore, I exhibited a simple ophthalmotrope, which I had devised, that showed very conclusively the presence of adduction when the paretic superior rectus permitted the resultant of the ten-

*Read before the Washington Society of Ophthalmologists and Otologists on March 18, 1910.

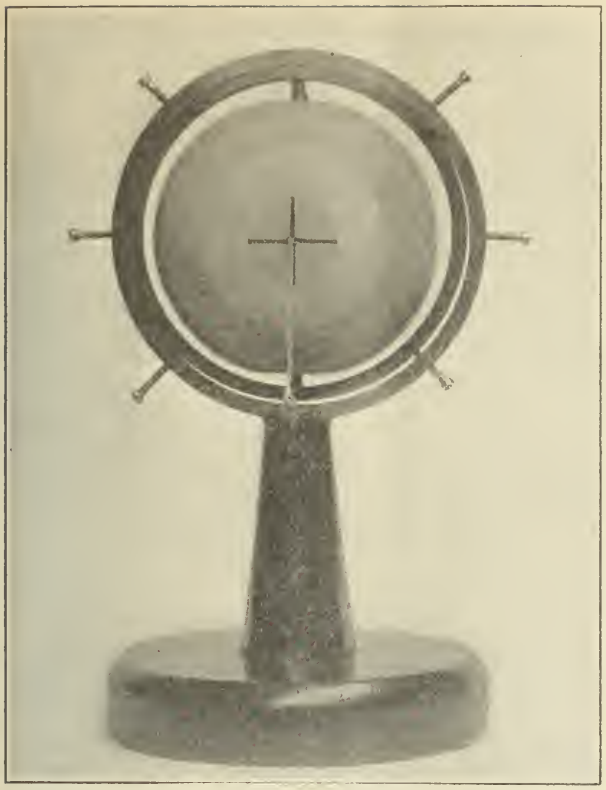

Fig. 1.—Primary position of the eye.

sions of the remaining healthy muscles to move the rubber eyeball on a horizontal axis, and abduction when the movement was on a tilted axis. This ophthalmotrope I have improved by making a better base and by using a hollow metallic sphere with numerous punctures and counterpunctures for securing any desirable axis and by the introduction of the plumb line.

This evening I wish to call your attention to the widely spread prevalence of erroneous views that are being taught in works on anatomy, physiology, and ophthalmology in reference to physiological and pathological torsion of the eyeball.

Listing's plane is indispensable in the study of normal ocular motility, and yet it is very seldom, if ever, mentioned in current and standard textbooks on physiology and ophthalmology. It is a coronal plane, a vertical transverse plane fixed in the head, passing through the centre of motion of each eye and perpendicular to the sagittal (fore and aft) axis of the eye in the primary position. In Listing's plane there is a *fixed* vertical axis passing through the centre of rotation of the eye around which the eyeball can be adducted or abducted. There is also in this plane a fixed horizontal axis passing through the centre of rotation of the eye. Around this axis the eyeball can be superducted or subducted. Rotation of the eye from the primary position to oblique secondary positions takes place on axes in Listing's plane intermediate between the fixed vertical and horizontal axes in this plane. For rotation on any oblique axis in Listing's plane has a component of motion about the fixed vertical axis and another component about the fixed horizontal axis. This is in conformity with exact and well known mathematical principles. But, on equally exact mathematical principles, there cannot, when the eye rotates about an oblique axis in Listing's plane, be any component of motion about a fixed, sagittal, fore and aft (anteroposterior) axis passing through the centre of motion of the eye and perpendicular to Listing's plane.

Only *two types* of motion are possible on axes in Listing's plane: 1. *Actual* rotations or versions about axes (one at a time) in Listing's plane; and 2, *virtual* rotations or torsions about the constantly moving line of fixation of the eye.

In the primary position of the eyes (Fig. 1) the line of fixation of each eye may be considered as perpendicular to Listing's plane at the centre of rotation of the eye and as coinciding with the fixed fore and aft axis. But when the eye turns, on an oblique axis in Listing's plane, from the primary position to an oblique secondary position, the line of fixation departs from the perpendicular position to an oblique one in reference to Listing's plane. This obliquity increases *pari passu* with the version of the eyeball. At the end of the version of the eyeball, around the oblique axis in Listing's plane, the amount of torsion is noted, not by regarding the eye along a fore and aft axis perpendicular to Listing's plane at the centre of rotation (Fig. 2); but by regarding the eyeball straight along the ever movable line of fixation of the eye, this line of fixation of the eye now being oblique to Listing's plane (Fig. 3). When looking straight along the length of the line of fixation the amount of torsion of the meridian of the eye that was vertical in the primary position of the eye is observed with reference to the vertical plane that passes through the point of fixa-

Fig. 2.—Torsion of the eyeball, as erroneously observed.

Fig. 3.—Torsion of the eyeball when correctly observed.

tion, the apex of the cornea, and the centre of rotation. The plumb line in the model shows the front border of this plane (Fig. 3). Nothing but error and confusion can result from an attempt to study physiological or pathological torsion of the eye by the use of a fixed fore and aft axis perpendicular to Listing's plane at the centre of rotation of the eye as is illustrated in Fig. 2.

In the accompanying illustrations are shown the writer's modification of Dr. Stevens's ophthalmotrope in two essential respects, viz., 1, the use of *two* complete rings encircling the rubber eye so that rotations can be secured on *oblique* axes in Listing's plane, and 2, the introduction of a *plumb line* suspended from the extremity of a rod passing through the anterior and posterior poles of the metallic eye, —the rod representing the line of fixation. The extremity of the rod from which is suspended the plumb line represents the point of fixation of the eye. In the primary position of the eyeball (Fig. 1) it is to be regarded by the observer from such a point of view that the observer's line of fixation coincides completely with the line of fixation of the metallic eyeball; under these circumstances the extremity of the line of fixation of the metallic eye will hide its length (being seen foreshortened) from view and will appear as a round spot against the centre of the cornea. In consequence, in this primary position of the metallic eyeball, its vertical meridian will coincide with the vertical plane passing through the ball's line of fixation and the plumb line attached to its extremity and there will be no torsion.

In Fig. 2 the metallic eye has been rotated on an oblique axis in Listing's plane up and to the model's left from the primary position depicted in Fig. 1 to an oblique secondary position. But the metallic ball is regarded by the observer from the same point of view as in Fig. 1,—that is, from the same point of view as if the metallic eye were still in the primary position as in Fig. 1. This point of view leads to nothing but error and confusion. Yet it is the point of view advocated by the great majority of writers on anatomy, physiology, and ophthalmology. This photograph of the ophthalmotrope shows that the vertical meridian indicates torsion in one direction (dextrotorsion) and the horizontal meridian torsion in the opposite direction (sinistrotorsion). So no correct conclusions as to torsion can possibly be derived by the use of a vertical plane of reference through an anteroposterior or visual axis perpendicular to Listing's plane.

In Fig. 3 we have the same oblique secondary position of the metallic eyeball as depicted in Fig. 2, but the point of regard of the observer is changed so that the line of fixation of the observer corresponds to the line of fixation of the metallic eye. Now the two meridians of the cornea tell the same story, viz., torsion nasalward (sinistrotorsion).

As far as the musculature of the eyeball is concerned and from a mechanical point of view the eyeball is capable of revolving about any conceivable one of an infinite number of axes passing in any direction through the centre of rotation of the eye. And yet Listing, Donders, and Helmholtz taught that every possible movement of the eye from a primary to a secondary position occurs around an axis restricted to one plane (Listing's plane). This restriction of the axis to one plane is a matter of innervation, of encephalic coordination. The errors I particularly refer to are those pertaining to the physiology and pathology of torsion of the eyeball, although incidentally I also refer to the serious errors that still exist in physiologies and ophthalmologies about community of axes for the two oblique muscles and the superior and inferior recti muscles. It would seem to the writer that so important a subject as Listing's plane and its vital bearings on ocular motility should occupy a conspicuous place in works on physiology and ophthalmology. I take at random from my library the works of Noyes, Swanzy, May, Fox, de Schweinitz, Fick, Nettleship, Jackson, and Juler, and none of them mention Listing's plane. Some of them do not mention the proper position for the axes of the superior and inferior recti or for the obliques, and others clearly state the erroneous view that they are horizontal. I take at random Landois's and Brubaker's physiologies, and Gray's, Quain's, Morris's, Piersol's, and Sobotta and McMurrich's anatomies, and they teach erroneous views about torsions of the eyeball. I take from my library also, all of which books are at your disposal, two elaborate and systematic works on ophthalmology, viz., Norris

and Oliver's *System of Diseases of the Eye,* and de Schweinitz and Randall's *American Textbook of Diseases of the Eye, Ear, Nose, and Throat,* and they both teach erroneous doctrines as to torsion of the eyeball and community of axes. Most of them give correctly all of the actions of the individual muscles, but some do not. Even those authors that give correctly all of the actions of the individual muscles say nothing about the axes of the superior and inferior recti and the obliques, or give the erroneous doctrine of community of axes.

The ophthalmotrope that I have devised and recently improved, especially by the introduction of the plumb line, shows clearly and indisputably that Listing, Donders, Helmholtz, Meissner, Le Conte, and Maddox are correct and that the above mentioned writers are in error.

Following I give some quotations from the authors I have mentioned as being in error. First, from de Schweinitz's *Diseases of the Eye:* "Rotation of the eyeball around the visual line. The movements of the eyeball directly upward, downward, inward, or outward are around axes which are *perpendicular to the visual line.*"

This expressly and clearly implies that torsion takes place around the anteroposterior or sagittal axis and that this axis is perpendicular to the fixed plane of Listing.

Dr. Albert P. Brubaker, the distinguished professor of physiology in Jefferson Medical College, writing on the subject of General Physiology of Vision, in de Schweinitz and Randall's *American Textbook of Diseases of the Eye, Ear, Nose, and Throat,* teaches the same erroneous doctrine. He there says: "The movements of each eye are referred to three *fixed* lines or axes which have their origin at the point of rotation of the eyeball, this point lying about 1.7 mm. behind the centre of the globe. If the eye looks straightforward in the horizontal plane (the head being erect) the line joining the centre of rotation with the object looked at is the visual line or visual axis. Around this anteroposterior axis" (which, remember, he says, is one of three *fixed* lines) "the eye may be regarded as performing its circular rotation or torsion."

From Quain: "The movements of the eyeball may be conveniently reduced to four kinds, viz., 1, simple lateral movements in a horizontal plane; 2, simple movements of elevation or depression; 3, oblique movements of elevation or depression; and, 4, movements of rotation about a sagittal axis." Quain's *Anatomy,* II, p. 291, edition 1892.

From Cunningham: "The six muscles inserted into the eyeball serve to move the *longitudinal axis* of the eyeball upward, downward, inward, and outward, besides causing a rotation of the eyeball on its own axis," i. e., its sagittal or anteroposterior or visual axis. Cunningham's *Anatomy,* Revised Edition, 1905. Cunningham's *Anatomy* also says that in adduction of the eyeball the inferior rectus rotates the vertical meridian of the cornea inward, whereas it, on the contrary, rotates it outward (dextrotorsion).

From Norris: "All the movements of the globe take place by rotation on axes passing through the centre. Though the possible axes are numerous in combined muscular action, there are *three principal axes*" (the italics are mine) "of rotation of the eyeball, and in reference to these the action of the individual muscles must be described. Two of these axes are horizontal and one vertical; they all pass through *the centre of rotation at right angles* to *one another.* By rotation of the eye on its vertical axis the cornea is moved outward (toward the temple) and inward (toward the nose), movements called respectively abduction and adduction. In upward and downward movements the cornea of the eye rotates on its horizontal equatorial axis.

"The other principal axis of rotation is the sagittal which we have previously described as corresponding to the line joining the anterior and posterior poles of the globe. In rotation of the eye on its sagittal (anteroposterior) axis, therefore, the cornea may be said to move as a wheel on its axle," etc. (Norris's *Anatomy,* III, p. 1037, Edition 1907.)

From Sobotta and McMurrich: "The function of the superior rectus muscle is to move the anterior part of the eyeball—that is to say, the cornea and pupil—up and at the same time temporalward." (III, p. 264.) Temporalward is incorrect. It should be nasalward. Further, he omits the important sinistrotorsion. Again they say the superior oblique "turns the posterior half of the eye upward and nasally." (P. 265.) Nothing about the important sinistrotorsion.

Further they say: "The inferior oblique moves the posterior hemisphere of the eyeball downward and medially and at the same time a little forward (the pupil upward and laterally), and with the superior oblique it turns the bulb principally about a sagittal axis,"—that is, as I understand them, a rigid fore and aft axis perpendicular to Listing's

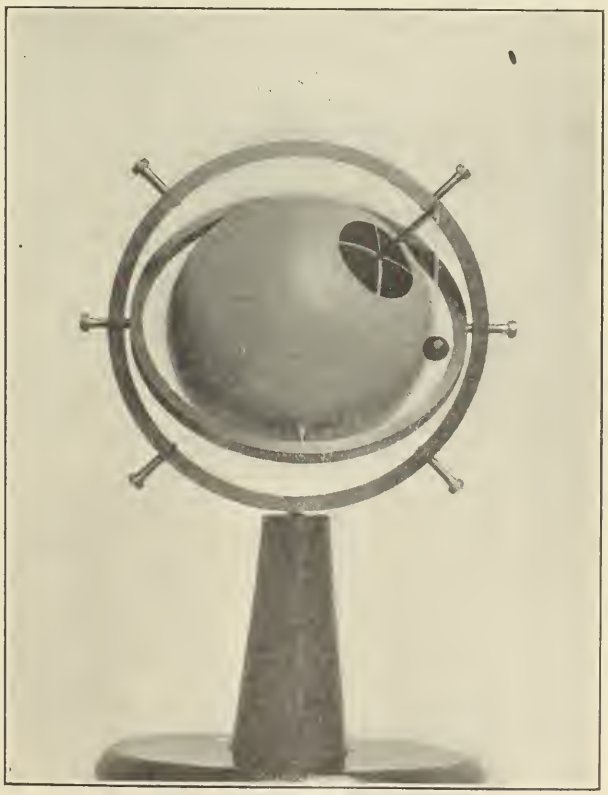

Fig. 4.—Shute's modification of Stevens's ophthalmotrope.

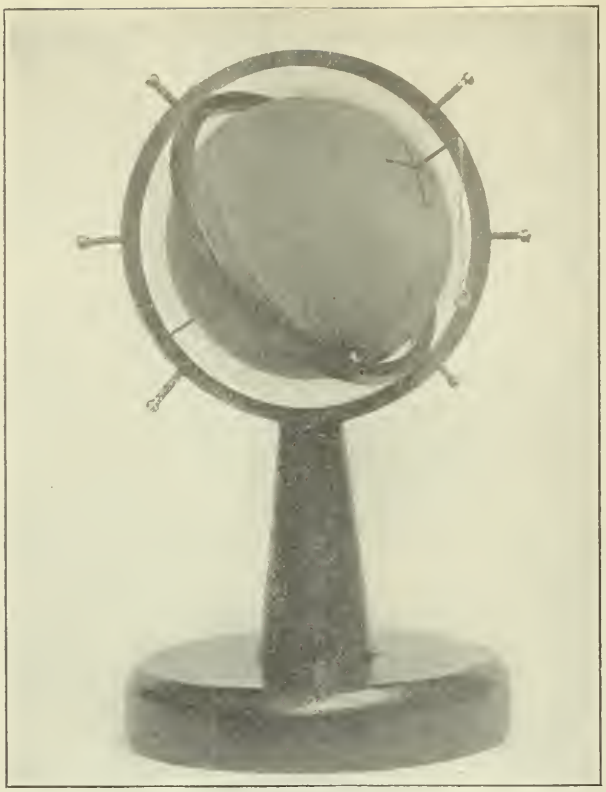

Fig. 5.—Showing discrepancy between the teachings of the vertical and horizontal meridians of the cornea.

plane. (Sobotta and McMurrich's *Anatomy,* III, p. 265.)

From Piersol: In Fig. 518, page 506, Piersol uses a diagram from Landois's *Physiology* which is erroneous in that it represents community instead of diversity of axes for the obliques and the superior and inferior recti. In the second place, as having a vitally important bearing on this very question of diversity instead of community of axes, this diagram represents a *single* muscle *line* for each *muscle plane,* whereas two muscle lines should be depicted for each muscle plane, employing two separate figures, in the primary position of the eyeballs, in the case of the obliques and the allied recti. In reference to this point I quote from my paper read before this society in 1905: "Writers on physiology and ophthalmology teach that the muscle planes form fixed angles with the median plane of the head. This is an error. The *lower edge* of the muscle plane of, say, the superior rectus, forms a fixed angle with the median plane (27 degrees for the recti), whether the eyes be in the straightforward primary position, or whether they be abducted or adducted. This is because the lower edge of this muscle plane extends from one immovable point (the centre of origin of the muscle) to another immovable point (the centre of rotation of the eye). But the *upper edge* of this muscle plane makes very varying angles with the median plane. This is due to the fact that while the centre of origin of the muscle is immovable, its centre of insertion is very movable."

When the eyeball is abducted into such a position that the superior rectus becomes a pure elevator the muscle plane is vertical, and the line of force of the muscle may, without any great error, be represented by a single line passing to the centre of rotation. But when the eyeball is adducted the *upper edge* of the muscle plane has approached very pronouncedly toward the median plane of the head. In this case it is extremely erroneous to represent the line of force as going to the centre of rotation, for now the muscle plane is *oblique* instead of vertical and demands a *tilted* axis. The point of tangency of the upper edge of the muscle plane with the eyeball is such that, even in the primary position, the muscle plane is oblique (its upper edge making an angle of 25 degrees with the median plane) and demands an oblique instead of a horizontal axis. The same is true of the inferior rectus, whose muscle plane is tilted in the opposite direction, so that there cannot possibly be a community of axes between these two muscles. The same holds in regard to the obliques.

In reference to the superior oblique muscle Piersol says: "Action. To rotate the eyeball so that the pupil is directed inward and downward." It should be outward instead of inward, and he omits to mention the equally important nasal torsion. (P. 504.) Likewise he fails to mention the important function of torsion as a part of the actions of the inferior oblique, and the superior and inferior recti.

From Gray's *Anatomy:* "The oblique muscles rotate the eyeball on its anteroposterior axis. (Gray's *Anatomy,* 17th Edition, 1908, p. 377.)

In Norris and Oliver's *System of Diseases of the Eye,* p. 4. Landolt, writing on the Anomalies of the Motor Apparatus of the Eyes, says: "Thus we know that the superior oblique, while causing the eye to turn downward and outward, exerts upon it a rotation about the *anteroposterior axis,* which causes the upper end of its vertical meridian to lean toward the nose." He goes on to say that "the opposite occurs through the influence of the inferior rectus, which inclines the meridian outward" on the anteroposterior axis.

Even so original and clear thinking a master of the philosophy of ocular motility as Dr. G. T. Stevens says: "The superior oblique, in the *primary position,* rotates the eye somewhat outward and downward, but principally turns it on its optic axis, causing the horizontal meridian to tilt with its temporal end upward." (*Motor Apparatus of the Eyes,* p. 107). In Fig. 35 on page 114 of his book, he depicts the eye in his ophthalmotrope as being in an oblique secondary position and as observed along a fore and aft axis perpendicular to Listing's plane, and he infers that the vertical and horizontal meridians of the cornea teach the same lesson. This point of view leads to nothing but error and confusion. In my modification of his ophthalmotrope (Fig. 4) the camera shows a different state of affairs and very clearly reveals that the horizontal and vertical meridians of the cornea tell exactly opposite stories.

The farther to his left of the fixed anteroposterior axis the observer moves his head in regarding the ophthalmotrope the more pronounced the discrepancy between the teachings of the vertical and horizontal meridians of the cornea (Fig. 5); the farther to the right he moves his head the less

the discrepancy, until finally both meridians teach the same lesson (Fig. 6). On p. 107 Dr. Stevens says: "The superior and inferior recti act more and more as simple elevator and depressor as the eye is directed outward from the primary position to the extent of 30 degrees, when they act directly on a horizontal axis at right angle to the course of the muscles." This clearly shows that Dr. Stevens believes there is a community instead of diversity of axes for these two muscles. All previous clinical experience with ocular paralysis discountenances this theory.

Should a single muscle like one of the obliques, or like the superior or inferior rectus, contract (say, through spasm) it would, of course, turn the eye on an axis *out of* Listing's plane. In consequence of the action of, say, the superior rectus the *actual* rotation of the eye on the inclined axis perpendicular to the oblique muscle plane would carry the apex of the cornea up and in toward the median vertical plane of the head, and there would be, in consequence, a *virtual* torsion of the vertical meridian of the cornea nasalward,—a *virtual* torsion on the line of fixation. Paralysis of the same muscle (which is by far the most frequent occurrence) would give an actual rotation and a virtual torsion in the opposite direction.

Ordinarily the most judicious way to study the ocular muscles is by close observation of the average person, rather than by investigating unusual and forced movements.

In my judgment, the vast majority of people, when they have occasion to look from the primary position to an oblique one, do so by turning the head in the desired direction. By this movement the eyes are kept *virtually* in the primary position in reference to the tilted Listing plane, and then the final fixing of the object is made by the more delicate movement of the eye to an oblique position in reference to this tilted Listing plane and by means of an axis in this tilted plane. Likewise, when people look from one oblique position to another oblique position the coarse adjustment is by a movement of the head. Then the final nice adjustment is made by a movement of the eyes on an axis in Listing's plane.

The writer can, of course, keep his head still and turn his eyes up and in to one oblique position and then, still keeping the head still, turn his eyes directly to another oblique position, say, to the position up and out. But the sensation produced by the unnatural movement is decidedly disagreeable to him.

Ophthalmologists very frequently have occasion to note how hard it is to get patients to keep the head quiet and in one position while they are instructed to turn the eyes in different directions for the purpose of making examinations of the fundus with the ophthalmoscope. Some people apparently cannot turn the eyes in different directions without instinctively turning the head also.

These observations but tend to convince me that probably, after all, the vast majority of movements of the eyes take place on axes in Listing's plane. I have no doubt but that many movements can take place on axes out of Listing's plane physiologically, as they undoubtedly can pathologically, just as I have no doubt that many people can walk around the floor on their hands with their feet up in the air.

Helmholtz says that if the eye be abducted or adducted from the primary position and then be turned up or down the movement takes place not on an axis in Listing's plane, (as Dr. Stevens makes it turn in his ophthalmotrope, Fig. 35 in his book) and not on an axis in the equatorial plane of the eye that is perpendicular to the line of fixation, but on an axis in a plane which bisects the angle between these two planes. This is an unnatural and therefore an unusual procedure of the eye. When an eye wants to look up and out, for instance, it does so directly on an oblique axis in Listing's plane, the head having been first turned in the desired direction, and thereby saves time and effort and avoids disagreeable sensations in the eyes,—instead of going first out and then up.

If the eye passes from one oblique position to another oblique one without passing through the primary position on a straight line, the phenomena are different. If, for example, the eye passes from a position upward and outward to a position downward and outward, it does not do so on a single axis, in Listing's plane, but on a great number of axes, following quickly, one upon another; and I think it highly probable that in the unnatural and forced movements of the eyes, when the head is with an unpleasant effort kept fixed, these rapidly changing axes may all be restricted to the commonly used Listing plane.

Recent psychological studies by Judd, Dodge, and others, with ocular movements as the subject of investigation, lend great plausibility to this view of rapidly changing axes in Listing's plane; for they teach that the eye does not sweep accurately along straight lines and gracefully around curves, but that it moves in a halting and almost in a wandering

Fig. 6.—Showing both meridians teaching the same lesson.

manner, somewhat suggestive of the periodicity of an arterial or pulse wave.

Ocular physiology and ocular psychology are very intimately related. But we have not time further to allude to this elaborate and tempting field of study, intimate as are their bearings on the questions at issue.

I am strongly inclined to the belief that even Stevens's *declinations* are nothing but virtual torsions. Different forms of declination, as revealed by a vertical Maddox rod before each eye and a double prism with its ridge horizontal before one eye, are so commonly associated with different forms of heterophoria, as revealed by the phorometer, that it is extremely plausible to infer that they are as intimately interwoven as are the components of the action of a single muscle like, say, the components of action of the superior rectus. If this assumption is correct then it is absolutely erroneous to speak of declinations as being ordinarily due to wheellike rotations upon an anteroposterior axis. From his reading and practical experience with patients the writer is convinced that the great majority if not all of declinations are nothing but *virtual* torsions.

It is possible, of course, that some declinations may be due to rotation about an anteroposterior axis that is perpendicular to Listing's plane at the centre of rotation. But the writer cannot help but believe they are far more infrequent than is generally believed. If the eyes have an ideally correct conjugate innervation and ideally accurate muscular attachments and normally acting muscles there can, of course, be no declinations when the eyes are in the primary position. If a declination occurs when the eyes are in the primary position it must be due to excessive or defective action of one of the obliques or of the superior or inferior rectus. Under these circumstances the declination is not due to rotation of the eye on an anteroposterior axis, but it is due to rotation upon an axis out of Listing's plane and other than the anteroposterior axis. If the declination is due to the insertion of an internal or external rectus that is too high or too low, these muscles approximate in action to a superior or inferior rectus and have three components of activity instead of one. Under these circumstances the eye would be rotated upon an oblique axis out of Listing's plane and perpendicular to the abnormally situated muscle plane of the internal or external rectus; and the declination would be nothing but a virtual torsion around the line of fixation as an axis. If this view be correct certainly the great majority, if not all, declinations are abnormal and therefore pathological, whether they cause asthenopia or not.

CONCLUSION.

In conclusion we will say that in studying the movements of the eye *three* very distinct and separate portions of the cornea are to be noted, viz.: 1, The apex of the cornea; 2, the horizontal meridian of the cornea and its outer or temporal extremity, and 3, the vertical meridian of the cornea and its upper extremity as observed in the primary position of the eyes. The position of the apex of the cornea at the end of a version of the eye is ascertained in reference to rotations around *two fixed* lines in Listing's plane,—a vertical and a horizontal axis. Rotations about the vertical and transverse axes in this plane can be compounded into rotations about any intermediate axis. The amount and character of the deviation of the apex of the cornea are noted in reference to the point of intersection of the fixed vertical and horizontal lines in Listing's plane; in other words, in reference to the location of the apex of the cornea in the primary position of the eye.

The amount and character of the virtual torsion of the eye are ascertained by noting the tilt, one way or the other, of the upper end of the vertical meridial of the cornea in reference to the vertical plane through the whole length of the line of fixation, and by regarding the eye along the line of fixation and not by regarding the eye along a fixed anteroposterior axis perpendicular to Listing's plane. Further, we must rigidly distinguish between *actual* rotations or versions around axes in Listing's plane, and *virtual* rotations or torsions around the line of fixation of the eye.

1719 De Sales Street.

REPORT OF A CASE OF MOLLUSCUM FIBROSUM, ADDISON'S DISEASE, AND PULMONARY TUBERCULOSIS.

By Isidor N. Kahn, M. D.,
New York,
Clinical Assistant, Tuberculosis Clinic, Gouverneur Hospital.

Case. The patient presenting this interesting trio appeared at the Clinic giving the following history:

He was forty-two years old, born in Austria, and emigrated to the United States twenty-two years ago.

His father died at the age of seventy-five. He was a strong and healthy man, and up to the last was vigorous and well. His mother, eighty years of age, was living and well; all brothers and sisters living and well.

The patient did not remember any diseases of childhood. He had had smallpox at the age of eleven, followed a short time later by "ascites." He was tapped several times and made a complete recovery. No history of typhoid, malaria, pneumonia, or venereal diseases. Habits were good. He married at the age of twenty-seven. Had five children, all living and well.

Upon his arrival at the United States his occupation was that of a painter. He worked at this trade for about eleven years, when he began to suffer of painter's colic. He then gave his trade up and took himself to street peddling.

Nine years ago, to quote the patient, he began to notice the appearance of pigmented spots on his chest, which spread very rapidly. Simultaneously with this pigmentation, multiple "swellings" appeared on the upper part of his body. He commenced to feel very weak, lost his appetite, and vomited frequently. He suffered from severe headaches and felt pain in the lumbar region. These symptoms continued up to the present day; of late he began to cough and feel extremely weak. He complained of dyspnœa on the slightest exertion.

Physical examination: Temperature, 98.8° F.; pulse, 64; respiration, 24. Patient was markedly emaciated, but of fairly good color. His mucous membranes were normal. Thyreoid gland not enlarged. Considerable exophthalmos present. The asthenia was extreme.

Skin: His skin showed a diffuse pigmentation all over the body. It was brownish yellow in color, and of a deeper shade over the face, hands, waist line, and genitals. Areas of bronze colored patches were found on the back, over and between the scapulæ, also on the legs and arms. The skin of the neck was deeply pigmented. Small leucodermic spots were seen scattered over arms, legs, and gluteal region. The mucous membranes were not pigmented.

Multiple tumors were found all over his body; they varied in size from an ordinary wart to that of a walnut.

They were located over the upper part of the back, numerous between and over the scapulæ, and quite numerous in the lumbar region. Some were found on the neck and extremities; one, of some size, at the anus, and another at the parietal eminence on the right. Over the right

Fig. 1.—Showing pigmentation and leucodermic spots.

temporal region, a sac of skin was hanging down. It was the remains of a considerable sized tumor, which grew at this spot and had undergone a species of atrophy, leaving the overstretched skin sacculated.

The heart was not enlarged, displaced somewhat to the right. Apex beat hardly palpable. The heart sounds were very weak. No murmurs heard; some arteriosclerosis was present.

The liver and kidneys were not palpable. The spleen was palpable one half an inch below the free border.

Examination of the lungs showed increased vocal fremitus over the right axilla and posteriorly at the right base. Numerous crepitant râles were heard at the right axilla from its middle portion to the base. Some râles were also present posteriorly over the right base, and few over the left base near the median line.

Clinical examination: Urine was of light amber color, acid, clear; specific gravity, 1.018; examination for albumin and sugar negative; diazo reaction negative; microscopically, few white blood cells.

The blood pressure (taken by the Stanton sphygmomanometer) was 110.; hæmoglobin, 108 per cent.; red blood cells 5,480,000 to the cubic millimetre.. Color index 1.1. Anisocytosis, poikilocytosis, polychromatophilia, granular basophilia, not noticeable; erythroblasts, 0; white blood cells, 8,400; polynuclears, eighty-three per cent.; large lymphocytes, two per cent.; small lymphocytes, ten per cent.;

Fig. 2.—Showing areas of bronze colored patches.

large mononuclears, three per cent.; transitionals, two per cent.

Sputum: No tubercle bacilli found.

As I have failed to find a case of morbus Addisonii, molluscum fibrosum, and tuberculosis pulmonalis in one individual on record, I thought it well worth while reporting this case.

115 Second Street.

ANÆSTHESIA OF THE EXTERNAL AUDITORY CANAL AND OF THE MEMBRANA TYMPANI WITH ETHYL CHLORIDE SPRAY.

A New Speculum Allowing the Immediate Evaporation of the Ethyl Chloride.

By C. J. Kœnig, M. D.,
Paris, France,
Otorhinolaryngologist of the American Hospital.

A complete and rapid anæsthesia of the external auditory canal or of the membrana tympani is so useful, and even so necessary, when one considers the extraordinary sensitiveness of those parts in the majority of people, that I was very eager to

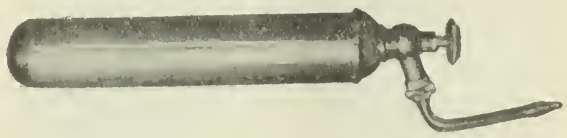

Fig. 1.—Ethyl chloride tank.

try the method recommended by Schild, of Baltimore.[1] I had often thought of local anæsthesia of these parts by means of the ethyl chloride spray, but I had never dared to apply it to the membrana tympani, limiting its application to the external part of the auditory canal for the opening of furuncles and protecting at the same time the drum, as much as possible, with cotton smeared with petrolatum, against the freezing, for I feared the effect of the latter upon the middle ear. I was happy to hear a colleague assert that freezing of the drum was neither painful nor injurious, and I was thus encouraged to try it. I was particularly eager to do so, as cocaine alone had never satisfied me, and the mixture of Bonain (cocaine, menthol, and crystallized carbolic acid, equal parts), if it really acted, did so too slowly, after twenty or twenty-five minutes, which represented a great loss of time. I never saw the effect obtained in two minutes, as Bonain states, except when there existed already a perforation. Furthermore, in certain cases, the use of the Bonain mixture may have serious consequences on account of its causticity. In that case a simple solution of cocaine is quite sufficient.

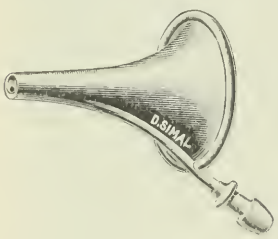

Fig. 2.—Glass tip.

Boulay (verbal communication) saw a case of facial paralysis follow immediately upon its application on a patient with a small perforation of Schrapnell's membrane. The paralysis, which he does not attribute with certainty to the mixture of Bonain, disappeared in a few days.

I owe to Dr. Mahu the two following observations:

Case I.—F. André, ten years old, acute otitis media following influenza, February 11, 1908. Drum greatly bulged out, temperature 39° C. Paracentesis of the drum after anæsthesia with the Bonain mixture. Four hours after, intense pains deep in the ear and the mastoid. Horrible night in spite of hypnotics. The next morning, facial paralysis. Perforation in the lower part of the drum wide open. Subsidence of the pain after application of moist compresses and instillation of sodium bicarbonate solution. Little by little everything went on well as far as the ear was concerned, the temperature diminished, the suppuration disappeared. However the facial paralysis persisted and on February 29th, Dr. Huet, chief of the electrotherapeutic service at the Salpêtrière, elicited the reaction of degeneration. After massage, electric treatment, the face returned to about normal when at rest, only a slight contracture persisting. The Bonain mixture used was examined at the Pharmacy Yvon and found well prepared.

Case II.—T. René, five years old. July 22, 1908, acute grippal otitis media. Paracentesis in the morning after anæsthesia with the Bonain mixture. Terrible pains the whole afternoon with contraction of the face. The next morning, normal conditions were reestablished.

The cases quoted, although not absolutely convincing, may render us somewhat mistrustful toward the Bonain mixture and urge us to seek some other mode of anæsthesia. Ethyl chloride presents itself to us. I desired to try it and sent for the ethyl chloride tank with glass tip especially constructed, under the indications of Dr. Schild (Fig. 1). The glass tip is about four and one half centimetres long, is very slender and is screwed to the tank at an angle which allows a good view of the

Fig. 3.—Administration of ethyl chloride.

drum when the glass tip is introduced into the speculum. A very fine *vaporization* is obtained, and not a jet. It can easily be directed onto a given point, the patient being in the seated or recumbent position.

Schild's technique is the following: He begins with an almost imperceptible vaporization until the patient feels a certain degree of coolness; then, very gradually, he increases the volume of the vaporization by opening the valve slowly, at the same time facilitating the evaporation by means of an insufflation of air into the auditory canal with the Politzer bag. He usually stops the vaporization when the patients begins to complain of a slightly painful sensation, he then blows in a little more air and operates, the whole procedure requiring but a few minutes.

I have used Schild's ethyl chloride tank about ten times, and can confirm the good effects of the

[1] E. H. Schild. Ethyl Chloride Anæsthesia of the Membrana Tympani and External Auditory Canal, *Journal of the American Medical Association*, July 8, 1905, p. 89.

method and its harmlessness in adults, and also in children, for I had the occasion to perform a paracentesis on an infant nine months old. I have also modified and, I believe, improved the technique, in order to obtain a freezing, and consequently an anæsthesia, almost instantaneously, at the same time using but an infinitesimal quantity of chloride. I had an aural speculum constructed[2] with a small canal running the whole length of and in the thickness of its wall and terminating on the edge of the funnel shaped end in an olive tip (Fig. 2) on which is adapted a small rubber tube about 20 cm. long. The free end of the latter is provided with a tip made of glass, or of any other material, for introduction between the lips of the operator. With this arrangement, the Politzer bag, which complicates the manœuvre, can be dispensed with. Air is insufflated with the mouth while the ethyl chloride is being vaporized (Fig. 3); the evaporation takes place instantaneously causing an immediate freezing of the drum. The effect is obtained in a few seconds instead of a few minutes, as with Schild's technique. I need no assistant; the freezing obtained, I lay the tank aside on my table to my right, and I take in hand my paracentesis needle. The whole thing is finished in ten seconds.

65 Rue de Miromesnil.

TUBERCULOSIS OF THE LARYNX.*

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I have chosen "tuberculosis of the larynx" as the subject of the present address, for several reasons: 1. Because of the great and widespread interest which is being taken at the present time, in the battle against tuberculosis. 2. Because I find a tendency amongst medical students to overlook laryngeal conditions. 3. Because I find that tuberculosis of the larynx, popularly called "throat consumption," is regarded by the general public, and by many physicians, as an utterly hopeless condition.

If I can do anything to deepen and extend the interest in this movement for the extermination of the "white plague," I desire to do so. If I can do anything to make the study of diseased conditions of the larynx more attractive to my fellow practitioners, I am anxious to do it, and, above all, I want to impress you with the conviction that, those of your patients who are the subjects of laryngeal tuberculosis can be greatly helped, and many of them can be cured by suitable treatment, conducted in a patient, hopeful, and enthusiastic manner.

That tuberculosis of the larynx may be a primary affection is affirmed by some, denied by others, and doubted by many. It is undoubtedly true, that in the great majority of cases, the disease is secondary to pulmonary phthisis, but I can see no reason why it may not begin in the larynx and later be communicated to the lungs. Frankenburger[1] has shown that "tubercle bacilli may exist on the laryngeal mucosa of well persons free from tuberculosis. He experimented as follows: A small piece of cotton was held in a tube by a fine forceps, so that it was protected from touching the mucous membrane of the pharynx, so that contamination by the secretions of the mouth and pharynx was prevented. When the tube reached the larynx, the cotton was protruded and wiped over the mucosa of the larynx, taking up some of the mucus. It was then pulled back into the tube, and the tube withdrawn. The specimen thus obtained was cultivated, and eventually the culture was injected into guinea pigs and rabbits. In some cases the animals remained well; in others abscesses formed showing the presence of various pathogenic microorganisms, and in one case tubercles developed containing tubercle bacilli. Frankenburger reasons that these bacilli must have penetrated by inhalation and that a primary infection of the larynx is thus possible."

Cohen[2] reported a case of primary tuberculosis of the larynx, in which the disease had a fatal termination and the findings of the autopsy seemed to fully confirm the diagnosis.

Shurly[3] believes that the disease often develops primarily, and argues that if it were otherwise, it would be found in "nearly every case of the pulmonary affection, instead of only about thirteen per cent. of such cases."

Sources of the infection. In by far the largest number of cases the infection comes from the lungs and is carried by the sputum into the larynx. Other channels of invasion may be the lymph or blood-vessels, or it may come from affected lymphatic glands, or, as has been shown, the tubercle bacilli may be inspired directly into the air passages.

Predisposing causes. The predisposing causes are age, sex, occupation, acute or chronic catarrhal laryngitis, the inhalation of dust into the larynx, or any debilitating disease. The same factors which produce tuberculosis in other organs of the body, may cause it to develop in the larynx. The age of greatest susceptibility is between twenty and forty years. The disease is found much more frequently in males than in females, the proportion being more than two to one.

Symptomatology. Lockard[4] gives as the primary symptoms of laryngeal tuberculosis, "an unilateral paresis of the cords, with intermittent hoarseness." Cough develops quite early in the disease, and in the later stages becomes very troublesome. Another symptom of which patients very frequently complain, is a sensation of tickling and dryness in the throat. There is usually some fever and, not infrequently, night sweats. Emaciation, loss of strength, loss of weight, expectoration, and all the usual symptoms of pulmonary phthisis may be associated with tuberculosis of the larynx. The symptoms will vary with the varying stages of the disease. The cough will increase in severity with the development of the disease. The expectoration which was at first mucus, will become mucopurulent and may be streaked with blood. The huskiness of

[2]By Simal, of Paris.
*Lecture delivered at the Philadelphia Polyclinic and College for Graduates in Medicine, April 6, 1910.

[1]*Practical Medical Series*, iii, p. 311, 1909.
[2]*Archives of Laryngology*, ii. 1881.
[3]*Diseases of the Nose and Throat*, p. 301.
[4]*Tuberculosis of the Nose and Throat*, p. 49.

the voice may culminate in complete aphonia. Pain is but little complained of in the early stages, or before ulceration has commenced, but when deep ulceration occurs in the epiglottis and the arytænoid process, the pain is greatly increased and the act of swallowing causes the patient distress and suffering. This condition is very serious, as it adds greatly to the difficulty of feeding the patient.

The character and location of the lesions. The parts of the larynx most frequently affected are the vocal cords, the posterior wall, and the arytænoid cartilages, though any and every part of the larynx may become involved in the tuberculous process. There are various forms or manifestations such as, infiltration, superficial ulcers, tuberculoma, and deep ulceration. The most frequent site of the ulceration is the true vocal cords, though ulcers frequently appear on the epiglottis, the false cords, and in other locations.

Diagnosis. The diagnosis can only be made by use of the laryngoscope. There are cases in which all the structures of the larynx and pharynx are of a fiery red color. These are the inflammatory cases which usually end in death in from six weeks to six months. But this is not the common type. On the contrary, the mucous membrane generally appears pale and anæmic, with points of more or less circumscribed swelling. As the disease progresses, this swelling enlarges and becomes more diffused. At times there is very great œdema. The arytænoids become very much enlarged and assume a peculiar club-shaped appearance. The epiglottis becomes greatly swollen and takes on a turbanlike shape. This is very characteristic of tuberculosis of the larynx, though it only appears in the later stages of the disease. Ulceration takes place comparatively early, and causes destruction of the soft parts. These ulcerations will be found in the locations already indicated. At first, they are small and multiple, but later on they unite and form larger ones.

Lockard[5] regards as the most characteristic feature of tuberculosis of the larynx, its tendency to affect only one half of the larynx, while the catarrhal congestion is always bilateral. Laub[6] and others have attempted to determine by statistics whether a correspondence exists between the side of the larynx affected and the side on which disease of the lung exists. But, although Laub found by far the greater number of unilateral cases other authors have had different results, and the question must still be regarded as among the things unsettled. Semon[7] says that, "bilateral congestion of the cords almost never points to anything but simple laryngitis." The congestion of a single cord may be due to trauma, but, in that case, the history will determine the diagnosis. And, in the absence of trauma, one sided congestion should lead us to suspect tuberculosis, syphilis, or cancer. In all such cases there should be a most careful and thorough examination into the personal history of the patient.

The greatest difficulty in the matter of differential diagnosis is to distinguish between the lesions of tuberculosis and those of syphilis; but in the one there are the signs of tuberculous disease, and in the other is the history of syphilitic infection. Packard[8] has pointed out that the early lesions are apt to be situated in the posterior portion of the larynx, especially in the region of the arytænoids, while syphilitic lesions are likely to involve the anterior portion first. The fact that laryngeal tuberculosis is so frequently associated with pulmonary phthisis, will aid in the diagnosis, for while the subject of tuberculosis will appear weak and emaciated, the patient suffering from laryngeal syphilis may be strong and well, as to his general condition. The appearance of the ulcers is different in the two diseases. In tuberculosis, the parts surrounding the ulcer are quite pale; the syphilitic ulcer is surrounded by a red, inflamed margin. The development of the tuberculous ulcer is slow, that of the syphilitic very rapid. Tuberculous ulcers are usually small and multiple, while syphilitic ulcers are, as a rule, large and single, or few in number. Tuberculous ulcers are usually covered with pus, or mucopus, while syphilitic ulcers have little secretion; moreover, the syphilitic ulcer is deeper and more sharply limited than the tuberculous, the latter having a more worm eaten appearance.

The character of the voice will aid in the diagnosis. In tuberculosis the voice is weak, often a mere whisper, but in syphilis the voice is strong but hoarse. The cough of phthisis is more troublesome and characteristic than the syphilitic cough; the expectoration is more profuse, and complete aphonia, which is common in tuberculosis and sometimes comes on comparatively early in the disease, is quite rare in syphilis. The pain in advanced cases of tuberculosis of the larynx is much greater and more distressing than in a case of syphilis. It is to be borne in mind that we may have a mixed infection, the two diseases existing in the same patient at the same time. In these cases the diagnosis is, of course, more difficult, but by the administration of potassium iodide and by careful bacteriological examinations, these cases, except in very rare instances, may be cleared up.

In malignant disease of the larynx, pain is complained of much earlier and is more constant than in tuberculosis. In the early stages of the disease, Horne[9] places much emphasis on the location of the lesions. "The part richest in glandular structures is most vulnerable to tuberculosis infection, and this part is covered with columnar epithelium, this is the arytænoid and interarytænoid surfaces. On the other hand, the part clad with squamous epithelium is relatively free from glands and immune against tuberculosis, except as it becomes involved by continuity. The vocal cords and ventricular bands are of this character and here epitheliomatous growths are most likely to start."

Prognosis. The prognosis in tuberculosis of the larynx depends upon the stage of the disease, the location and character of the lesions, the presence or absence of other diseases, the general condition of the patient, his recuperative powers, occupation, hygienic surroundings, and many other considerations, so that each individual case must be decided upon its merits. It may be stated that the disease in its milder forms does not have a great effect

[5] *Tuberculosis of the Nose and Throat*, page 96.
[6] *Practical Medical Series*, iii, p. 315, 1909.
[7] *British Medical Journal*, October 12, 1907.
[8] *Diseases of the Nose, Throat, and Ear*, p. 229.
[9] *Practical Medical Series*, iii, p. 315, 1908.

upon the general health. Under proper treatment, the larger number of those patients having simple infiltration will get better and many of them will get well. The prognosis of the ulcerative cases will depend much upon the location and the character of the lesions. When the ulcerations are superficial and confined to the interior of the larynx, with no involvement of the epiglottis or aryepiglottic folds, the outlook for improvement is fairly good, but when deep ulcerations seize upon the last named structures, the prognosis becomes exceedingly grave and doubtful.

Treatment. The general treatment of tuberculosis of the larynx is the same as for pulmonary phthisis. Rest, fresh air, and suitable food are of first importance. Too much emphasis cannot be laid upon these things. Rest, not of the body alone, but of the vocal cords in particular, must be insisted upon in every case. Loud talking, singing, and public speaking must be abstained from entirely, and conversation, if indulged in at all, should be confined to whispers. Life in the open air is of superlative value to every tuberculous individual. In many cases a change of climate may be neither necessary nor desirable, but the patient must have plenty of fresh air both by day and by night. When a change of climate is deemed necessary, it must be to a locality where the air is warm and moist. Nothing is worse for a person suffering from tuberculosis of the larynx than a dry, dusty atmosphere. Patterson,[10] of Colorado Springs, testifies to the value and advantage of climatic changes in the treatment of certain cases of laryngeal tuberculosis. He says: "I shall never forget the fear in attempting the control and betterment of laryngeal tuberculosis engendered by experiences on the eastern seaboard that assailed me in beginning work in this line in Colorado, but I well remember the surprise that awaited me as a result of my efforts. I began seeing cases that I should have considered utterly hopeless, improving under methods that were futile elsewhere."

That the patient may take full advantage of the air that surrounds him, it is important to correct all abnormalities of the upper air passages and make the breathing apparatus as perfect as conditions will allow. Then teach the patient how to breathe. Give advice as to clothing and hygienic surroundings. Prohibit the use of tobacco. Encourage a cheerful, hopeful spirit. A cheerful spirit doeth good like a medicine. A melancholy, despondent disposition on the part of the patient, renders the work of the physician doubly difficult. "There is a spirit in man," and it is a great point gained when you can arouse that spirit to assert itself in a determined effort to fight and conquer the disease. One of my patients when assured that his disease was pulmonary tuberculosis "set his face like a flint," and said, "I was never born to die of consumption." He determined to follow instructions absolutely and do everything in his power to get well, and his improvement has been most gratifying to himself and his physician, and simply amazing to his friends.

The food of the patient must be nourishing, easily digestible, and such as will not cause pain in swallowing. So that in the treatment of any case of tuberculosis, special prominence is to be given to these as the essential things:—Rest, food, fresh air, and sunshine, and to these I would add the cultivation of a cheerful spirit. Still, drugs have their place, and when properly used will prove very helpful. As tonics, I have found arsenic and strychnine to be of especial value. I think that these drugs are better when given singly than when given in combination. To allay fever, judicious bathing is strongly recommended.

For sleeplessness, which is frequently a troublesome symptom I usually prescribe veronal, from five to ten grains in powder, to be taken one hour after supper. Trional or the bromides, in suitable doses, may be given for the same purpose.

In the way of general medicine for the treatment of laryngeal tuberculosis, Shurly[11] regards iodine conjoined with some proteid substance, as the agent which furnishes the best results. Potassium iodide in glycerin and water, mixed with bouillon, beef tea, or milk, gives better results than when given alone. Iodine may also be given in combination with glycerin and extract of malt.

Local treatment. Local treatment will include the use of sprays, gargles, powders, pigments, astringents, inhalants, etc. It is well to begin the local treatment by spraying the nose and throat twice a day with some alkaline solution such as Seiler's or Dobell's. This may be followed by an oil spray of camphor, menthol, and liquid albolene. This treatment can be carried on by the patient at home. Other local measures will be determined by the general condition of the patient and the particular manifestation and development of the disease. Infiltration, ulceration, swelling, and œdema, harassing cough, great pain, and difficulty of swallowing, are conditions which call for varied treatment. The use of astringents as regular routine treatment is not to be recommended or encouraged, but used with discretion they may serve a helpful purpose. When granulations appear, a solution of silver nitrate will prove a valuable application. Europhen in olive oil is a fine medicament which may be freely applied to the pharynx, nasopharynx, and larynx. Menthol in oil may be used in the same way, or a twenty per cent. solution of menthol may be given for inhalation at home. Soothing inhalations are very grateful to patients. For this purpose Packard[12] recommends tincture of benzoin and oil of eucalyptus, from half a drachm to a drachm; water, three or four ounces. The iodine preparations give best results in cases of infiltration and in which there is loss of voice but no pain. Methylene blue may be used in solutions of from three to five per cent. in cases of circumscribed infiltration or of superficial ulceration. This is a remedy which gives very great relief, so that patients who have experienced its value will often request to have the application repeated at subsequent visits. For the treatment of cough, a great number of remedies have been suggested. In this connection I would call special attention to Beverley Robinson's[13] method of treatment by inhalation. He uses a perforated zinc inhaler, with a small sponge. The mixture used for the treatment of an irritative cough, consists of beech-

[10] *Laryngoscope*, September, 1908.

[11] *Diseases of the Nose and Throat*, p. 309.
[12] *Diseases of the Nose, Throat, and Ear*, p. 232.
[13] *American Journal of the Medical Sciences*, August, 1908.

wood creosote, alcohol, and spirit of chloroform in equal parts. Six or eight drops of this mixture is dropped on the sponge every hour during the day and several times at night and inhaled. Terebene, five to ten drops on sugar, and taken three times a day, is an old but valuable remedy in the treatment of cough. This also may be inhaled according to Robinson's method. When ulcers form they must be treated and, if possible, cured. After cleansing the larynx with an alkaline solution, cocaine, in a ten per cent. solution, is applied, after which the ulcers may be cauterized with lactic acid, trichloracetic acid, or the galvanocautery. Following the application of lactic acid, iodoform or orthoform powder may be insufflated into the larynx.

Levy,[14] who has written much and well on the subject of laryngeal tuberculosis, gives the following excellent treatment:—"Cleanse the larynx. Use a spray of from three to five per cent. of cocaine to allay sensibility. This prevents cough and the dislodgment of the powder. Next insufflate a portion of the following:—

℞ Morphine sulphate, ...gr. x;
Iodoform, ...ʒiss;
Powdered acacia, ...ʒii.
M.

The morphine relieves pain for a length of time after the effect of the cocaine has disappeared. The acacia adds to the adherent properties of the iodoform. This treatment rapidly heals ulcers."

Pain is always a bad sign in this disease, and when it is associated with, or caused by a swollen epiglottis, the act of swallowing is exceedingly painful, and the matter of feeding becomes more and more difficult. The outlook for such cases is very grave. The chief thing to be done is to relieve the pain. For this purpose opium, codeine, or chloral hydrate may be used, either alone or combined with iodoform or aristol. To relieve the dysphagia, the larynx may be sprayed with a solution of cocaine before eating, or a lozenge containing cocaine may be dissolved in the mouth.

There is not time, neither have I thought it necessary on this occasion, to enter upon a discussion of radical surgical operations for the relief or cure of tuberculosis of the larynx. I would remind you of Sir Felix Semon's advice[15] on the subject of surgical procedures. "Let infiltrations alone, so far as surgery is concerned; curette and apply lactic acid to ulcers if single or few, and involving the vocal cords, ventricular band, or interarytænoid fold. Ulcers on the epiglottis, aryepiglottic fold, or arytænoid are not so amenable to treatment."

In my closing words, I desire to emphasize the idea with which I commenced, that tuberculosis of the larynx is not to be regarded everywhere and always as an incurable malady. It is a disease which calls for the exercise of all the skill and care and patience of which the physician is capable. But let him labor in hope. The careful, painstaking, and conscientious laryngologist will find that some of his cases will yield to treatment and result in cures, that a much larger number of patients will be greatly and permanently improved, and that the worst and most hopeless patients will have their suffering alleviated and their comfort increased. And, surely, to relieve distress, even when there can be no cure, is something worth while. To him that doeth good work shall be a sure reward.

5343 Baltimore Avenue.

[14] *Medical and Surgical Reporter*, lxvi, 1891.
[15] *On Principles of Local Treatment*, p. 69.

THE VALUE OF TEST MEALS.*

By J. Russell Verbrycke, Jr., M. D.,
Washington, D. C.

The help which we may obtain from test meals in the diagnosis of stomach affections is often underestimated and there are a number who question the value of the test meal, some who are honest in their conviction that the meal is rarely needed in order to make a diagnosis, some who are prejudiced, considering it more or less of a grand stand play of the stomach specialist for the moral effect on the patient, some because of too superficial a knowledge and the consequent inability to correctly interpret all the findings, and finally, unfortunately, a few who do not care to make an exact diagnosis and institute rational treatment but endeavor to hit or miss by empirical measures.

Undoubtedly, if one selects in alphabetical order, twenty-five practitioners in a community and asks how many test meals they give in the course of the year the resulting figures will be small in proportion to the number of dyspeptics empirically treated during this period. A prominent clinician recently said to me, "What do you actually think of the value of test meals? I confess that I have very little faith in their helpfulness."

It is not many years since the practice of giving test meals was first instituted and examination of the stomach contents begun. Although von Leube in the early seventies began using the stomach tube for diagnosis he did not produce the flow of gastric juice by a standard meal of food under normal conditions but caused excitation by various means, finally depending upon ice water. In 1884 Riegle first recommended examining the stomach contents at the height of digestion of a uniform meal. His meal is still in use, a plate of meat broth, 150 grammes beefsteak, fifty grammes mashed potatoes, and a roll. It serves some purposes better than the simpler test breakfast of Boas and Ewald, one or two rolls and a cup of tea or warm water. The latter is in favor with most men in most cases, because of its simplicity, the shorter time taken, the easier recognition of food stagnation from other meals, the smaller amount which the patient has to eat, and the fact that the meal may be taken in the morning.

We have as helps to medical diagnosis signs, symptoms, and tests of three different varieties: Those that are pathognomonic of a certain condition; those which although not pathognomonic are probable indicators of a certain pathological state; and finally those which while not of great value *per se*, are, when taken into consideration with other factors, apt to influence our decision somewhat and perhaps tip the scales in favor of a doubtful diagnosis. There are examples of all of these in the various tests of the stomach contents.

*Read before the Medical Society of Georgetown University, February 12, 1910.

We can by a painstaking history and careful physical examination make a diagnosis in a number of the anatomical diseases of the stomach. We are often aided, however, and our opinions confirmed in this class of cases, by certain findings from examination of the test meal. Again, we can by this means arrive at the extent of the functional changes which are coincident with the anatomical disease. In the purely functional cases we can only obtain a definite idea as to the degree of abnormity by means of the test meal.

In diseases of the kidney one can often make a diagnosis of nephritis by the pasty look of the patient's complexion and the puffiness under the eyes, but he is very remiss who does not make frequent examinations of the urine to determine, chemically, the amount of functional disorder and, microscopically, the amount of kidney breakdown. So in digestive disorders we are not arriving at exactness unless we find out all that it is possible to find.

The use of the stomach tube, in addition to recovering material for macroscopical, microscopical, and chemical examination, gives several useful bits of information. In the introduction of the tube we can tell if there is any organic stricture or spasm of the lower end of the œsophagus or cardia. We can determine the length of time food remains in the stomach, the condition of motility, the presence or absence of pyloric obstruction, also whether the patient eats hastily without proper mastication. One can not determine with any degree of certainty the size or shape of the stomach by means of the tube, although, of course, the return of an extremely large amount of stagnating food indicates dilatation.

Certain points should be borne in mind, the forgetfulness of which has resulted in some of the skepticism in reference to the value of test meals. Conclusions can not always be based on the result of one meal, certainly, at least, in secretory disturbances. The reason for this is the profound effect which the patient's emotions may have upon digestive functions, thereby giving erroneous impressions. If we find some points other than secretory disturbance, we can rely on the one meal. Nor does this fact enter into a very large proportion of the functional cases but there are some nervous patients who are greatly worried over the idea that their stomach is going to be "pumped out" and their fear and dread of the new experience can quite profoundly alter the gastric secretions.

A uniform meal should be employed. For general use the Boas-Ewald test breakfast is satisfactory and presents advantages as already enumerated. The meal should be removed at a definite time, one hour after ingestion. In a certain proportion of cases the meal will almost entirely have passed out into the intestines by this time. This shows excessive motility, temporary or habitual, and the next meal may be taken away after forty-five minutes.

It is impossible to obtain all the stomach contents and the endeavor to get all that is possible is disagreeable and exhausting to the patient. Still one should recover all that can be easily obtained in order to form a relative idea of the amount of secretion and to avoid getting a small amount from the cardia which may differ from the rest of the contents. Expression is better than aspiration, or a combination of the two may be utilized.

Not only should a chemical examination be made but also a microscopical examination and the macroscopic appearance noted as Weinstein[1] has recently emphasized their importance and the fact that the chemical results are often misleading when taken alone.

I will now give a brief summary of some of the findings and their importance in the various stomach affections:

Excessive acidity, hyperchlorhydria, excessive secretion: The most frequent of the secretory disturbances is excessive acidity. A diagnosis may usually be made by its characteristic symptoms, but it is interesting to note the degree of acidity which is not possible by means of the symptoms. Occasionally we note a case with characteristic heartburn and pyrosis after meals with diminished acidity or even achylia, as mentioned by Einhorn.[2] Stockton[3] thinks that these are probably instances of chronic glandular gastritis with exacerbations producing irritation and hyperæsthesia. Cases illustrating this are the following:

Case I. Mrs. J. A. C., white, widow, fifty-eight years of age. Family history negative. Past history negative except for two attacks of anæmia, resembling chlorosis, when a girl. Illness began about a year ago, cause unknown, running an irregular course. She complained of a burning and discomfort in the upper abdomen, especially in the midepigastrium. Appetite varied, usually patient was hungry but could not eat. Had pyrosis, particularly after indigestible food, which lasted until she took more food. Always felt better for some time after taking food. Physical examination was negative except for the fact that the right kidney was prolapsed to second degree, slight tenderness over midepigastrium extending to the right. Splashing sound over lower two-thirds of epigastrium, extending two inches below the navel, and well to the right. Test breakfast, one hour after ingestion, showed: 45 c.c. brownish contents, no odor, coarse food particles, no mucus, blood, tissue, or bile. Free hydrochloric acid absent, combined twenty-four, total acidity twenty-six. Lactic acid 0. Peptone present, propeptone trace. Acrodextrin and maltose present. Complete recovery in two months.

Case II. Miss M. A. S., age twenty, active in social life, and of nervous temperament, complained, among other things, of the following: Marked burning in the stomach when empty, lasting until she ate, when it was relieved; acid regurgitation, accompanied by burning sensation; occasional nausea and vomiting. Test breakfast showed free hydrochloric acid to be 5 and total acidity 15

It is interesting to note here that according to Linossler and Lemoine[4] sodium bicarbonate is always a stimulant of gastric secretions and that there is a soothing action on the tardy pains of digestion even in patients with secretory insufficiency. Thus a case can not be said to be overacid simply because relieved by soda.

According to Stockton's[5] note in Nothnagel's *System*, hyperæsthesia from the effect of hydrochloric acid is much more common with us than other nations, further that free hydrochloric acid above 0.2 per cent. is not often seen, and when hydrochloric acid exists in this proportion in an

[1] Weinstein, *Journal of the American Medical Association*, liii, p. 1710.
[2] Einhorn, *Diseases of the Stomach*, p. 383.
[3] Stockton, *Journal of the American Medical Association*, liii, p. 1960.
[4] *Bulletin de l'Académie de médecine*, Paris, April 14, 1908.
[5] Nothnagel, *Diseases of the Stomach*, p. 112.

American patient symptoms usually exist referable to excessive acidity. In view of this Dr. Morgan's case, which I reported before the society two months ago, of free hydrochloric acid, 154 or 0.56 per cent. and total acidity 204 or 0.74 per cent., with only slight pain after meals, is most unusual.

There may be a small amount of juice with high acidity or a larger amount with a relatively low percentage but high total content of hydrochloric acid, the latter condition leading to error if only chemical examination is made. The amount of food remaining is small, consisting of starch granules. Microscopical examination shows what one would expect from the macroscopic appearance, deeply staining starch granules. I have noted, as Weinstein[6] has also mentioned, bacteria present in an abundance of hydrochloric acidity, their not being destroyed thereby as is popularly supposed. Their presence indicates diminished motility. If the macroscopic specimen has shown a layer of food particles floating on top, yeast cells will appear under the microscope, evidencing starch fermentation.

Hypochlorhydria and diminished acidity. Much diagnostic significance can not be attached to the diminution or even absence of free hydrochloric acid, *per se*. Kelling[7] has recently contributed a valuable paper on the prevalence of this condition. He gives the findings in 4,937 stomach cases, and in this number, excluding ulcer cases, every seventh man and every fifth woman had no free hydrochloric acid. Quite surprising is the frequency of this condition associated with diseases of other organs than the stomach. No free acid was found in thirty per cent. of 254 cases of gallstones, and in from thirty per cent. to forty per cent. of the following: Diabetes, gout, kidney stone, tuberculosis. His large experience leads him to state that diminution or absence of hydrochloric acid can not be diagnosticated except with the aid of test breakfasts.

It is well to know, however, that the secretion is deficient (1) for any slight help toward a diagnosis, and (2) because it will materially affect the diet which we will order.

Achylia gastrica. The presence of this very interesting disorder in which the test meal shows entire absence of hydrochloric acid and the ferments, is only to be definitely proved by means of the test meal and chemical analysis. As Einhorn,[8] who first described achylia, says, (1) the patient may have the condition for years with no symptoms of the trouble; (2) the patient may have a variety of gastric symptoms, undistinguishable *per se*, with mild intestinal symptoms; or (3) there may be no apparent gastric symptoms but severe and obstinate diarrhœa. An interesting case is the following which closely resembles one described by Einhorn.

Case III. Mr. L. A., lawyer, age forty, married, nervous temperament, came to Dr. Morgan in December, 1909. Family history was negative. He had been a healthy boy but had had "nervous indigestion" as long as he could remember. Practically his only complaint was regurgitation after meals sometimes bringing up almost the entire meal. He sometimes expectorated what came up and again he would reswallow it. Never rechewed. Trouble started when he was a boy and became worse under mental strain and after much indoor work. Appetite was moderate. Had had slight diarrhœa on several occasions but only after dietetic errors. Physical examination was negative. Gastric analysis showed 60 c.c. clear, no odor, fine food particles, no blood, tissue, or bile. No free or combined hydrochloric acid. Total acidity 4, acrodextrin present. Maltose much. No rennet, pepsin, peptone, or propeptone. No lactic acid. Microscopical examination was negative.

A case illustrating the last group, or those with intestinal symptoms only, is that of a physician who was suffering from an obstinate diarrhœa. He had taken every remedy known to him with no result. Being prevailed upon to take a test meal an achylia was found and under a proper diet immediate relief was obtained. Einhorn[9] mentions a case with symptoms practically identical with those of hyperchlorhydria. So the importance of the test meal can readily be seen, particularly when achylia is not an infrequent disease and empirical treatment is useless, nothing being accomplished without recognition of the state of affairs and the institution of proper dietetic measures.

The results from the analysis of the test meal do not vary. The quantity obtained is generally small, motility as a rule increased, food particles are coarse and not much changed. There is no hydrochloric acid, ferments, propeptone, peptone or lactic acid. Mucus is absent excepting in cases following chronic gastritis. Starch digestion is very complete and total acidity is low, usually under 8.

Neurasthenia gastrica. Nearly all the diseases of the stomach can be, and often are, accompanied by nervous symptoms, so every care should be taken in distinguishing the purely nervous dyspepsias. Gastric symptoms have been estimated to be the most disturbing in seventy-five per cent. of the neurasthenics. Dr. R. C. Cabot[10] emphasizes the fact that many general diseases originating outside the stomach produce what are called gastric symptoms for which the patient is treated with pepsin, hydrochloric acid, antifermentative drugs, and gastric sedatives, when what is needed is general treatment.

But looking at it from another side, it is true that if all cases of so called neurasthenia were submitted to careful examination an anatomical cause, gastroenterological, gynæcological or what not, could be found in many cases.

Lest we err on either side let us remember the test meal as a means of help. The results of the meal are normal or vary from day to day. At least the symptoms complained of are out of all proportion to what is found on the various examinations.

The periodic vomiting of Leyden. This malady, although one of the most unusual diseases of the stomach, presents clinical symptoms so like gastrosuccurrhœa periodica that I mention it in passing to call attention to the fact that examination of the vomitus, in lieu of test meal, will give high hydrochloric acid in the latter, unless neutralized by regurgitation of intestinal contents, while in the periodic vomiting the juice is not disturbed.

Relaxation of the Pylorus. A marked degree of relaxation is rare, according to Einhorn,[11] but it is very common to find bile in the stomach contents in varying quantities. Provided some obstruction in the duodenal region can be ruled out, it is most fre-

[7] *Archiv für Verdauungskrankheiten*, October, 1909.
[8] Weinstein, *Journal of the American Medical Association*, liii, p. 1713.
[8] Einhorn, *Diseases of the Stomach*, p. 380.
[9] Einhorn, *Diseases of the Stomach*, p. 383.
[10] Cabot, *Journal of the American Medical Association*, xlix, p. 1140.
[11] Einhorn, *Diseases of the Stomach*.

quently the result of a loss of tone of the pyloric sphincter, a condition very frequently concomitant with chronic gastritis and an evidence of chronic fatigue. The test meal, thus, gives us an indication for treatment, stimulation of the gastric musculature, perhaps best accomplished by the faradic intragastric electric current.

We now consider the diseases of the stomach in which anatomic change has taken place. The test meal is of great use in the diagnosis of some of these conditions. As Torday[12] emphatically says: "It is absolutely essential to make a thorough chemical, macroscopical and microscopical examination of the stomach contents, since subjective symptoms can not be depended upon when taken alone, as gastric ulcer, gastritis, gastric neuroses, and cancer may each have identical histories but different laboratory findings."

Chronic gastric catarrh. Diagnosis can be made by mere inspection of the return in this condition. The return through the tube is often difficult, due to scantiness, thickness, and viscidity from mucus. Food particles are coarse and little changed. Gastric juice is deficient. Bile is often present in small quantities. Hydrochloric acid is usually low, free hydrochloric acid often entirely absent. Therefore proteid digestion is very poor. Microscopically are found: Mucus, leucocytes, epithelial cells, bacteria, and light stained starch granules. Whenever we have much mucus mixed with the test meal there is a gastritis. A mild gastritis with mucus often accompanies cancer, which must be ruled out by absence of any other carcinomatous signs and history. Stringy mucus unmixed with food comes from the throat, and lumps of mucus are from swallowed sputum. In acid catarrh a high acidity is present with the mucus.

Gastric ulcer. In gastric ulcer we may or may not obtain valuable information from the test meal. High acidity is most common. A painful localized spot, front or back, together with changed blood in the test meal and high acidity, will give a correct diagnosis. But blood in the stool is more common than in the stomach contents. Chemical tests for blood are to be relied upon rather than microscopical examination because of the rapid digestion of the cells. The color of fresh blood is changed almost instantly by hydrochloric acid. In the presence of an abundance of acid blood appearing at the time of the insertion of the tube will often be dark by the time it returns through the tube.

Gastric carcinoma. It is to the early diagnosis of gastric cancer that we should bend all our faculties. If we could by means of the test meal be helped toward a diagnosis in a single case we would be well repaid for our trouble and perhaps fruitless examinations in other cases. In this malady we look for a number of small signs, each of which is relatively unimportant, but when taken together and with other factors they have considerable weight.

The only finding which is pathognomonic of cancer is the discovery of a mass of malignant tissue. This is so rare as to be almost neglible. I have seen it in but one case. Finding of epithelial cells in large numbers is more common, but it requires considerable skill to differentiate the embryonic cancer cell from the epithelial cells of chronic gastritis.

[12]Torday, *Wiener klinische Wochenschrift*, xx, No. 25.

As mentioned before, very little importance is to be attached to the absence of free hydrochloric acid. The presence of a large quantity of lactic acid is of somewhat more value. Still more reliable is the presence of large numbers of Boas-Oppler bacilli. Weinstein[13] states, and I have observed the same thing, that either the Boas-Oppler bacillus or lactic acid may be present independently of the other. The rôle played by and the importance of these bacilli is a matter still being violently discussed from time to time. I think, however, that the consensus of opinion agrees with Stockton's assertion that, although the bacilli are not pathognomonic of cancer and are occasionally found in other conditions, they are never found in such abundance or with such regularity in any other disorder. Even more certain seems to be the finding of the bacilli in the stool, as pointed out by Rudolph Schmidt and lately emphasized in this country by Philip King Brown.[14] I have observed this as an early sign in several cases. Care should be taken not to confound other organisms with Boas-Oppler which are gram positive. Sarcinæ are absent in cancer, often being present in benign obstruction. The presence of occult blood in the stomach contents is of great value. Blood cells may be found, not usually being digested.

The latest, and what gives promise of being the most valuable, test is the presence of hæmolytic substances in the stomach content of cancer patients, discovered by Grafe and Röhner.[15] They have found in fifty-seven cases of certain cancer positive findings in every case, and never in the healthy subject excepting in the presence of trypsin, when the test is of no value. A negative test can be seen to be of great value in excluding malignant disease. A positive test, in the absence of trypsin, is said to indicate an ulcerating surface, either ulcer or cancer.

This brings us to the large class of cases where, unfortunately, we are still fighting more or less in the dark, the cancers engrafted on a preexisting ulcer. Of late years it has been discovered how very many of the carcinomata do develop in this way. Mayo[16] gives from his experience, in 187 resections for cancer, the proportion as fifty-four per cent. following ulcer. Rodman, in a paper before the American Surgical Association in 1908, gives practically the same figures. Even higher estimates have been made. Rodman says that little is to be learned from gastric analysis, as the chemical characteristics may remain the same as in simple ulcer, but that rapid and regular diminution and disappearance of excessive acidity at intervals is the most important sign and probably indicates that cancer is developing. Moynihan[17] says that chemical examination of the stomach contents in these cases is of little or no value in so far as early diagnosis is concerned and thinks that the most important facts tending to show the presence of cancer on an ulcer are the fact that the final attack is lingering and rebellious to treatment which before had afforded relief, the distaste for food, and anæmia with loss of weight.

But, in spite of the fact that we may not obtain

[13]Weinstein, *Journal of the American Medical Association*, liii, p. 1716.
[14]Brown, *Ibidem*, liii, p. 1525.
[15]Grafe and Röhner, *Deutsches Archiv für klinische Medizin*, xciv.
[16]Mayo, *Journal of the American Medical Association*, li, p. 653.
[17]Moynihan, *British Medical Journal*, April 3, 1909.

satisfactory results, it is well to make the various examinations and hunt for the small signs. Philip King Brown has reported several cases with characteristic clinical history of ulcer in which Boas-Oppler bacilli were found in the stool and later at operation beginning malignancy was found in each case.

Fortunately, both simple chronic ulcer and ulcer with carcinomatous degeneration demand the same treatment—operation. Mayo says that a carcinoma associated with an ulcer produces pyloric obstruction at an earlier stage than simple cancer, so we stand a better chance of getting them early.

If the test for hæmolytic substances in the stomact content proves equal to its promise we will be able to determine that an ulcerating surface is present, ulcer, carcinoma, or both. If, further, some of the cancer signs are found we would favor that diagnosis and the history of the case should be carefully analyzed. At any rate, if we can prove the presence of an ulcerating surface and the history, extending over a considerable length of time, is that of chronic ulcer, operation is demanded as soon as possible, and so perhaps in the future we shall be able to get rid of many of the incipient cancers on ulcer bases.

Gastric erosions.—Einhorn, in describing this disease, enumerates clinical symptoms which are pronounced and remarks that a comparison of the cases shows a marked resemblance existing among them, so much so that it is evident that they belong to a distinct group. This is true when one compares the histories after diagnosis has been made but without finding the pieces of mucosa in the stomach content either from the test meal or from a stomach wash, it is practically impossible to establish a diagnosis. The pieces of mucosa are pathognomonic. I recall a case seen in my hospital work in New York in which a clinical diagnosis of carcinoma had been made but which showed the pieces of mucous membrane, typically, later on, when a test meal was given and stomach washes examined.

Ischochymia.—Einhorn has adopted the term ischochymia to apply to those cases marked by a stagnation of food in the stomach and including several conditions, atony of the stomach, pyloric obstruction, benign and malignant, with subsequent dilatation. In the cases due to atony, the most infrequent, there will be found on examination some fine food particles from a former meal, as well as some fluid. The odor is indicative of fermentation or decomposition. There will be many bacteria, yeast cells, and perhaps sarcinæ. Hydrochloric acid is variable.

In pyloric stenosis of benign origin, the findings are principally different from atony in degree. The quantity obtained is large; odor generally rancid; food particles are coarse and more plentiful; appearance is dirty; and on standing it separates into three layers. Microscopically we find starch cells, fat globules in considerable abundance, yeast cells and bacteria in large numbers. Sarcinæ are often present. Acidity is high. Lactic acid is not usually found.

In malignant stenosis the sarcinæ are absent, Boas-Oppler bacilli are often present in large numbers, the odor is foul, and the other findings mentioned under carcinoma may be made.

In conclusion, I would make a plea for more frequent test meals in the diagnosis of stomach affections, believing that by giving due consideration to and properly correlating all the findings we are arriving at greater exactness, eliminating much of haphazard diagnosis and therapy and are putting the subject on a more rational basis.

I wish to express my indebtedness to Dr. William Gerry Morgan, in whose office a number of my observations have been made, for permission to cite most of the cases.

2307 First Street.

TWELVE DON'TS IN THE DIAGNOSIS AND TREATMENT OF APPENDICITIS.

By Maurice Chideckel, M. D.,
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Attending Physician, Hebrew Hospital Dispensary.

1. Do not treat your patient medicinally; *a,* when there are signs of peritonitis, *b,* when the temperature keeps on increasing, *c,* when a distinct tumor is felt in the right iliac fossa, *d,* when the pulse is slow, temperature low with local signs of peritonitis, and the appendix is becoming gangrenous, *e,* when there is sudden absence of pain, *f,* when the mononuclear percentage is over thirty, *g,* when acceleration of pulse is out of proportion to temperature, *h,* when the symptoms are severe soon after onset, *i,* when there have been previous attacks.

2. Do not treat medicinally if the patient happens to be a child; peritoneal involvement and abscess formation are very early features in children.

3. Do not confound appendicitis with Dietl's crises, typhoid fever, hip joint disease, stercoral typhlitis, intestinal lithiasis, intestinal obstruction, cholecystitis with distention, perinephritic abscess, tuberculous peritonitis, extrauterine pregnancy, renal colic, carcinoma of the cæcum, hypochondriasis, and hysteria.

4. Do not diagnosticate appendicitis if pressure along the descending colon causes no pain in the right iliac fossa.

5. Do not rely on Blumberg's sign alone (pressing the hand over McBurney's point and lifting the hand up suddenly; the return of the wall will give rise to a short acute pain). It is present in all cases of peritoneal inflammation.

6. Do not treat medicinally if Blumberg's sign is present. You are dealing with a peritonitis.

7. Do nothing that will interfere with the integrity of the skin, hence make no application of mustard, oil of turpentine, or hot water.

8. Do not give any food, not even water.

9. Do not allow your patient to move in bed. It will hasten perforation.

10. Give nothing that will increase peristalsis either of small or large intestine.

11. Give no drug that will paralyze the nervous tone, that will prevent expulsion of infectious discharges, or that will mask the symptoms.

12. Do not give too favorable a prognosis, no matter how mild the case may seem to be.

216 North High Street.

Our Readers' Discussions.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

XCIX.—How do you treat gonorrhœa in the male? (Closed June 15, 1910.)

C.—How do you treat œdema of the lungs? (Closed July 15, 1910.)

CI.—How do you treat chronic nasal catarrh? (Answers due not later than August 15, 1910.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED*) that the answers be short; if practicable no one answer to contain more than six hundred words.*

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The prize of $25 for the best essay submitted in answer to question XCVIII was awarded to Dr. Michael Schuman, of New York, whose article appeared on page 1338 of volume XCI.

PRIZE QUESTION XCVIII.

THE PREVENTION OF THE SPREAD OF SCARLET FEVER.

(Concluded from page 81.)

Dr. Francis J. Pursell, of Toluca, Mexico, states:

Probably the most important point of all in the consideration of this subject is that the physician himself should be fully and profoundly impressed with the grave character of this disease as to its death rate, complication, sequelæ, and the great difficulty encountered in preventing it spreading.

The doctor who is thus impressed will be more likely to impress on those responsible for the care of the patient the need for scrupulous care in the isolation and general care of the case—orders perfunctorily given will be most likely to be loosely carried out.

Early diagnosis at once suggests itself as being next in importance; during an epidemic the doctor is most likely to be on the lookout for these cases, and meeting one that looks suspicious will not even wait for an absolute diagnosis, but will isolate the case at once and report to the board of health; so it is when no epidemic exists that the doctor is most likely to be caught napping.

He must remember that all epidemics start from one case, and it certainly is a truism in preventing the spread of scarlet fever that eternal vigilance is the price of safety. A most careful examination of any case that presents symptoms that any way point to scarlet fever must be insisted on—never omitting the throat, as the characteristic punctate redness may prove to be the clinical feature that makes the diagnosis certain. It surely is unnecessary to say that an early diagnosis leads to early isolation and appropriate treatment, but the method of isolation will depend largely on the surroundings in which we find the patient.

Is the case in a tenement house in a large city and if so are the people who are going to take care of the case intelligent and seem likely to carefully carry out the doctor's orders? If they are not then the case must be transferred in a suitable ambulance with all the precautions necessary to the isolation hospital.

Suppose the patient is in better social surroundings but it is evident to the doctor that those responsible for the care of the patient are likely to be lax in their carrying out of orders as to isolation, etc., then the doctor must insist and the board of health must so order that the patient is transferred to the isolation hospital, it is in these cases that the doctor has the greatest need for firmness, he may be not merely the family physician but a friend and his duty to the public must outweigh all other considerations. I personally believe that the spread of this disease has often been due to lack of firmness on the part of the family physician.

Again, has the case occurred in a mining or lumber camp, far away from boards of health, here the doctor in charge often alone, has a grave responsibility, for sometimes he will encounter the hostility of those who employ him and an appeal to the health officers of the State in which the camp is situated may cost him his position.

However, in all of these cases, no matter how varied their surroundings may be, isolation is the first step to be ordered by the physician in charge.

In private families the room in which the patient is and one or two others adjoining and opening into it should be isolated from the rest of the house, the other children of the family not allowed to go to school, and in fact if the disease is epidemic the schools should be closed in that neighborhood.

The isolation of the patient must last until all desquamation has ceased and he has been disinfected. In most cases it is practically impossible to have complete isolation, food and other necessaries have to be brought in, soiled linen, etc., have to be taken out to be washed. So in order to make the partial isolation effective, disinfection must come to its aid and here the physician must be most minute in his instructions.

It is my practice to have hung just inside the door that connects the patient's room with the outside, a sheet, large enough to cover the doorway, kept wet with some suitable disinfectant. A large zinc washtub is placed in the room with enough active disinfectant to thoroughly soak all linen that comes in contact with the patient, and this should be allowed to soak for twenty-four hours before being turned over to the wash; the outside of the zinc tub must be wiped over with disinfectant before being placed outside the room; and another tub takes its place inside; if facilities exist for boiling all linen for one half hour before being placed outside for washing, so much the better.

All utensils, such as cups, etc., that are used by the patient should be placed in an efficient disinfectant for one half hour before being washed It is well to have carpets, curtains, pictures, and all unnecessary furniture removed from the room in which the patient actually is, and placed in another of the rooms that form the isolation suite, ready to

be disinfected after the case is over. The floor should be wiped over with some disinfectant every morning. Stools, sputa, and urine should also receive their proper disinfection. During the desquamation stage the body of the patient should be rubbed twice daily with some mild antiseptic ointment, preferably one that does not contain phenol, not forgetting to apply ointment between fingers and toes.

The question often arises in these cases, shall we isolate for observation those who have been exposed at all? Authorities differ as to the actual time at which the patient becomes a source of infection, therefore, although it may seem severe, the pathway of safety is to isolate those exposed till the full period of incubation has passed with no development of the disease.

Immediately after arranging for the isolation of the patient and those exposed, the physician must report the case to the proper authorities. Inspectors from the board of health should visit the house and see if in their judgment the case as conducted is a menace to the public health, and if so the case must be transferred to the isolation hospital. Some easily seen sign should be placed on the house indicating the presence of infectious disease. Proper pains and penalties should be enforced against the doctors who fail to report these cases to the board of health.

Appropriate treatment for the patient, preventing complication and hastening his recovery can certainly be considered as likely to prevent the spread of the disease.

The doctor himself must take all precautions possible to see that he is not a carrier of infection. He should wear a contagious disease suit, which should be put on over his clothes in the hall or at least before entering the sick room and taken off after leaving the sick room.

The nurse or those in attendance on the case should wear some form of washable wrapper, that reaches almost to the floor—in case of women it should be longer than the skirts. The head should be protected by a cap such as is used in surgeries. Careful washing of hands and face with antiseptic soap before eating or leaving the room should be enforced. It is well to use canvas slippers in the patient's room, the attendant putting on other shoes when going outside.

A word as to isolation hospitals:—If familiarity with contagious diseases does not breed contempt of them it often breeds carelessness in their handling and sometimes an isolation hospital is one in name only. More scrupulous care must be observed in these institutions than in private practice, if we can make a distinction, as the nurses employed in the hospital, when off duty, mix more freely with the outside world than private nurses do, so we must insist on the carrying out of the so called minute details of disinfection.

The patient has recovered or is dead. If he is dead the casket is placed in a room outside of the isolation suite, the body is carefully washed, hair as well, with a 1 in 500 bichloride of mercury solution, then wrapped in a sheet wrung out of the same strength solution and placed in the casket which is at once sealed. If the board of health in the town permits a funeral service being held in a church, it should be held not later than the day after the death and the interment the same day as the service, better to have no church service at all. On no account should permission be given to open the casket when once it is sealed. If those who have been caring for the patient attend the funeral they must have a bichloride bath, 1 in 1,000, and complete change of clothing prior to their mingling with the outsiders.

If the patient has recovered, he receives a warm bath, the whole body being washed, preferably with a two per cent. mercuric iodide soap, then washed off with warm bichloride of mercury solution, 1 in 1,000. The actual details as to how and where this bath is to be taken must naturally depend on the conveniences that exist in each individual case, the point in all cases is to prevent the patient after the bath, from coming in contact with any infectious material.

All cracks around windows, doors, etc., should be stopped by pasting paper over them, chimneys stuffed with paper, and the room so arranged that the disinfecting fumes will not pass outside. If carpets have been left down they should be taken up and hung over chairs; fabrics, blankets, and clothes should be hung on lines stretched across the room, mattresses should be placed arched on the bed springs. When all this is done and the disinfectant ready to be placed in the room, the walls, cupboards (doors open), furniture, carpets, etc., should be sprayed either with plain water or a 1 in 200 formalin solution.

The two most used disinfectants for this purpose are sulphur and formaldehyde, whichever is used care should be taken to see that enough and a little more is used; having found the cubic area of the room, a little more than the usual amount of the disinfectant allowed for that number of cubic feet should be used. If using sulphur do not forget to put the dish containing the torches in a bowl of water.

There are quite a number of apparatus for generating formaldehyde gas, and it seems to me that the simple ones are just as efficient as the complicated. The method of using briquettes of potassium permanganate with forty per cent. formalin solution is certainly one of the best.

Once the generation of the disinfecting vapor is begun the door is closed and sealed with strips of paper pasted over the cracks.

Twenty-four hours is usually considered long enough to wait before opening up the room, and now begins a careful washing of all floors and wood work with a 1 in 1,000 bichloride of mercury solution. All utensils are also washed with some efficient disinfectant. If the walls are papered they should be repapered, taking off the old paper first—if painted they should be repainted.

In all these precautions we must not forget that we are dealing with a germ that is most tenacious of life and whose virulence has been known to exist years after, and to resume its direful activity—perhaps on opening some trunk of clothes that had been exposed to infection, or again living in some room occupied by a scarlet fever patient and that was supposed to have been disinfected.

Correspondence.

LETTER FROM LONDON.

A Discussion on Syphilis.—The Matronship of St. Bartholomew's Hospital.

LONDON, *June 28, 1910.*

At a meeting of the Surgical Section of the Royal Society of Medicine, Mr. Ernest Lane opened a discussion on the treatment of syphilis. He said it was important to make an early diagnosis, and with the help of the Wassermann reaction a mistake in diagnosis should be impossible. As regarded treatment, he preferred not to limit himself to any one particular method of treatment and did not consider that one routine plan was applicable to every case of syphilis, but he would prefer to treat every case on its merits and according to individual peculiarities. Fortunately, in the majority of cases, syphilis was a benign disease and one which was particularly amenable to treatment, and in a simple case there was no necessity to look beyond the time honored method of administration of mercury by the mouth. But not every case of syphilis would yield to such simple measures, and it was not every patient who was tolerant of mercurial pills or mixtures. Intramuscular injections might be given in the form of the soluble or the insoluble preparations of mercury, and of the two the insoluble salts were undoubtedly the more valuable, for they produced results which were surprisingly constant in the rapidity with which they brought under control manifestations which had previously resisted other kinds of treatment and in controlling the subsequent course of the disease. The two reliable preparations of the insoluble salts were, first, calomel and, secondly, mercury suspended in some fatty basis and usually designated gray oil. Of these two methods, that of calomel injections was far the more efficient.

A course of twelve weekly injections was usually sufficient to clear up any urgent symptoms and to check the progress of any rapidly destructive lesion. The other insoluble mercurial preparation which had achieved much popularity was gray oil, consisting of mercury very finely subdivided with some fatty basis. Its action resembled that of calomel, but it was not nearly so powerful and its action was not so efficient, though it had some compensatory advantage, in that the resulting pain was much less severe. While calomel might be employed in intractable cases or in those in which some serious complication was present, gray oil was more suitable as a routine treatment, and for that reason was more in vogue in military and naval hospitals, where the patients could be kept under constant observation and supervision. In regard to the treatment by injection of soluble mercurial preparations, its drawbacks were obvious and its advantages were visionary. The principal objections to the inunction treatment were that the patient was compelled to regulate his habits to the requirements of the treatment and had to follow out a régime.

There was also great uncertainty as to the amount of the drug which would be absorbed, and in some cases it appeared to be absolutely inert. The general impression in this country appeared to be that mercurial treatment prolonged for two years was sufficient to guarantee, if not a cure, a subsequent immunity from symptoms. Such a supposition was in his opinion fallacious and dangerous, as was shown by the large number of cases of late syphilis specially involving the higher nerve centres, with which any one who was in the habit of treating the disease must be painfully familiar.

He had for a long time past recommended that treatment should be prolonged over a minimum period of five years, and in the case of those who were of a neurotic disposition and whose business entailed a strenuous and anxious life, he advocates that it should be extended over seven years. Obviously the treatment could not be continued for that length of time, but should consist of one initial course extending if possible over a year, then an intermission of three or four months, and then a series of shorter courses of treatment and more lengthy periods of intermission until the expiration of the number of years deemed necessary for each individual case. Mr. Lane then proceeded to discuss the arylarsonate treatment of syphilis. At first he had obtained most encouraging results with these preparations, but eventually he had met with a grave catastrophy, blindness being produced in a patient by a course of injections of one of these preparations, and since that time he had discarded their use.

A recent nursing appointment has caused dissatisfaction in many quarters. The matronship of St. Bartholomew's Hospital became vacant and the lady appointed was submatron of the London Hospital. This has caused resentment among the nursing staff of St. Bartholomew's Hospital, who considered that the new matron could very well have been chosen from their own nurses. They have certainly some reason for complaint, as the London Hospital grants a certificate after only two years' training, while St. Bartholomew's nurses must train three years. Their protest is being submitted to the governors of St. Bartholomew's Hospital and will probably carry conviction to a good many subscribers. In effect, it asks why a new matron should be chosen from a hospital where the rule is to grant a certificate upon a two years' course of training—a standard that is considered insufficient by the Local Government Board, by certain other government departments, by the Territorial Nursing Service, and by St. Bartholomew's itself.

LETTER FROM EDINBURGH.

A Discussion on Hypnotics.—Vomiting after Anæsthesia.—The Inspection of School Children.—An Epileptic Colony for Glasgow.—The Glasgow Infant Health Visitors' Association.—The King and the Edinburgh Medical Faculty.—Medical Missions.—The Glasgow Postgraduate Course.—An Honor to Professor Schäfer.—A Motor Meet.—The Health of Edinburgh.

EDINBURGH, *June 28, 1910.*

An interesting discussion on hypnotics took place at a meeting of the Edinburgh Medico-Chirurgical Society on June 1st. It was opened by a paper from Dr. F. D. Boyd on The Use and Abuse of the Artificially Prepared Hypnotics. He referred to Meyer's hypothesis which connects the hypnotic action of drugs with their solubility in fats. Paraldehyde was instanced as a safe and useful hypnotic; its bad

taste could be avoided by giving it as an enema, two to four fluid drachms per rectum often bringing on sleep in fifteen minutes. Sulphonal he condemned as slow, cumulative, and toxic. Bromural was especially useful in cases of emotional excitement. Veronal he described as a powerful and valuable hypnotic. It should never be given in powder, but only in solution, so as to admit of ready absorption. Frequent changes in the hypnotic were an important factor in the treatment, and all prescriptions for hypnotics should be marked "not to be repeated." Dr. Clouston said the question was, What was required, a sleep producer, a general sedative, or muscular relaxation? He supported the use of paraldehyde, and considered that the bromides were too much neglected in these days. He did not agree with Dr. Boyd as to the dangers of sulphonal, which he (Dr. Clouston) had found to be most useful, combined with potassium bromide, in the excitement of old age. Dr. Affleck was of opinion that hypnotics were more universally used now than ever before, and he thought that sleeplessness was less well borne now than hitherto. In simple insomnia his favorite prescription was a combination of bromide with tincture of hops. Dr. Sillar remarked that the question of combination was perhaps the most important point. Purgative pills were almost invariably compound, so that small doses of each drug might be employed, and for the same reason a combination of hypnotics gave greater certainty with small doses of each. Alcohol was one of the most useful of hypnotics, and a glass of beer or stout at bedtime might well replace the tincture of hops recommended by Dr. Affleck. A number of other medical men took part in the discussion.

The subject of postanæsthetic vomiting was treated of in a paper read by Dr. J. W. Keay to the Edinburgh Obstetrical Society on June 8th. He regarded this trouble as partly nervous and partly gastric in origin. When it occurred in nervous patients it was not serious, and could easily be checked by an enema of potassium bromide and chloral. Gastric irritation was produced by the swallowing of chloroform laden saliva. The stomach reacted by secreting large quantities of acid, and the treatment was to administer large draughts of warm sodium bicarbonate solution and to apply counter-irritation externally. He also suggested the use of adrenalin, three minims of the 1 in 1,000 solution being given by the mouth three times daily to contract the bloodvessels of the stomach. In the discussion that followed Dr. Ferguson considered that the tendency to vomiting might be diminished if the patient was carefully prepared by treatment with strychnine for some days prior to the operation. The president (Dr. Haultain) said that postoperative vomiting fell under one of three headings: chloroform, intestinal paresis, and peritonitis. He made no change in the patient's diet on the day before operation. If much sickness occurred he administered copious draughts of water and withheld food.

The more stringent inspection of school children is throwing extra work on the ophthalmic and dental hospitals, and this is being felt by the Glasgow Dental Hospital, an institution which has now completed a quarter of a century of work. Last year, with a decreased income from subscriptions—this seems to be the fate of all hospitals in these days—and a list of 14,362 cases treated (1,000 more than the year before), those in charge found it difficult to carry on the work as they would like. Fortunately some fifty students attend the hospital, and their fees help to keep it going. A noteworthy feature in the work done last year has been the increasing number of conservative operations as compared with extractions.

Some time ago the Glasgow Parish Council decided to start a colony for sane epileptics on the same lines as is now being done in some English towns. A deputation was accordingly appointed to visit existing colonies, and this deputation have now presented their report. It is recommended that the accommodation should be of the colony type, with one story villas and central administrative buildings. The erection of workshops is also recommended, so that patients may have continuous employment when the weather prevents their being employed out of doors. Constant work, the report states, is considered the best thing for warding off attacks and conducing to a contented and peaceful state of mind. Many epileptics are undoubtedly bad workers, but it is thought that with proper supervision of the individual wants of the patient better working results can be obtained. Accommodation will be required for about 200 epileptics.

The Glasgow Infant Health Visitors' Association is an active body. Under its auspices there are 307 visitors working in the seventeen organized districts of the city, and the last quarterly return shows that over 1,600 infants are being regularly supervised and visited every fortnight in the lower parts of the city. A series of lectures is now being delivered to the visitors, and to any of the public who may be interested, in the physiology class room at the University. The subjects of the lectures are: Physical Defects in Infants and How to Recognize Them, by Dr. James H. Nicoll; Common Diseases of Childhood, by Dr. J. B. Mackenzie Anderson; The Hygiene of Infancy, by Dr. Carstairs Douglas; and Preventable Blindness, by Dr. A. Maitland Ramsay.

Representatives of the Royal Colleges of Physicians and Surgeons of Edinburgh were presented to his Majesty King George V. at the recent Court. The College of Physicians was represented by Dr. W. Allan Jamieson, president; Dr. John Playfair, vice-president; and Dr. Norman Walker, treasurer; and the College of Surgeons by Mr. J. M. Cotterill, president; Mr. C. W. McGillivray, vice-president; and Mr. R. MacKenzie Johnston, treasurer. His Majesty graciously thanked them for addresses of sympathy tendered by these colleges, the following being part of his reply: "I am much gratified at your sympathetic references to the personal qualities of my beloved father, the late King, and to the practical aid which he vouchsafed to measures destined to ameliorate the condition of the sick and disabled. You may rest assured that the cause of medical science, in which I take so deep a personal interest, will continue to have my warmest support."

During the session of the World Missionary Conference in Edinburgh recently, a special meeting was held to discuss the medical aspects of missionary work. Dr. J. W. Ballantyne, of Edinburgh, and others, spoke, and the subjects dealt with were the

training and preparation of medical missionaries and mission nurses, the medical training of natives, and elementary training in medicine for foreign missionaries.

The autumn postgraduate course at the Glasgow Royal Infirmary has been arranged for the month of September, and the introductory lecture will be delivered by Sir James Barr, of Liverpool. The classes will be arranged on the same lines as in former years, and will include clinical medicine and clinical surgery, hæmatology, bacteriology, vaccine therapy, diseases of the eye, ear, nose, throat, and skin, gynæcology, electrotherapy, etc. Dr. J. M. Thom, superintendent of the Royal Infirmary, Glasgow, will furnish a copy of the syllabus on application.

Dr. E. A. Schäfer, professor of physiology at Edinburgh University, has received the honorary degree of doctor of medicine from the University of Berne, Switzerland.

Motoring medicos are to hold a meet at Moffat, in Dumfriesshire, on Friday, July 8th. The meet is to be under the auspices of the Edinburgh and the Border Counties Branches of the British Medical Association. Lunch will be served at the Hydropathic, after which a discussion on Motor Cars for Medical Men will be opened by Dr. Veitch, of Edinburgh.

The annual report of the Edinburgh Medical Officer of Health for 1909 states that the death rate for the year was 13.4 per 1,000, compared with 13.3 in 1908, which was the lowest on record. The birth rate is the lowest recorded for the city. The number of notified cases of typhoid fever during the year was only thirty-nine, and these were of a very mild type, with only five deaths. The report intimates that in the very near future the occurrence of this disease should be as infrequent as that of typhus fever. The number of cases of diphtheria has also shown a very marked decrease, being exactly 200 below the average number during the preceding five years.

Therapeutical Notes.

The Treatment of Chlorosis.—Rummo (*Il Policlinico,* through *Revue de thérapeutique,* June 15, 1910) prescribes the following pills:

℞ Iron glycerophosphate, ...5i;
Zinc bromide,
Monobromated camphor, ...āā 3ss;
Zinc phosphide, ...gr. i;
Extract of valerian, ...3ss;
Extract of cinchona,
Extract of coca, ...āā gr. lxxv.
M. ut fiant pil. No. 120.
Sig.: One pill three times a day.

Intravenous Injections in Exophthalmic Goître.—In the treatment of Basedow's disease Mendel (*Therapie der Gegenwart,* February 2, 1910, through *Revue de thérapeutique,* June 15, 1910) recommends the intravenous injection of a solution of atoxyl and sodium iodide, the advice being based on the affinities of the two drugs for the organs affected, notably the thyreoid gland. He injects at frequent intervals 2 c.c. of the following solution:

℞ Atoxyl, ...gr. xv;
Sodium iodide, ...3i;
Distilled water, ...3v.
M. Ft. solutio.

Under this treatment the trembling ceases and the profuse sweating is abated. The diarrhœa, hypertrophy of the gland, and tachycardia also disappear.

Ointment for Eczema of the Face.—Rostaine (*Revue des hôpitaux,* 1910, No. 5) advises the application of the following ointment in cases of eczema of the face in children:

℞ Salicylic acid, ...
Precipitated sulphur, ...āā gr. xv;
Pulverized camphor,
Oil of cade, ...3iiss;
Zinc oxide, ...3v;
Petrolatum, ...3i.
M. Ft. Unguentum.

REMEDIES OF RECENT INTRODUCTION.

(*Continued from page 82.*)

Fermentdiagnosticum is another name for glycyltryptophan, a peptide compound of an amino acid which is used as a diagnostic test for carcinoma of the stomach.

Ferralbol is a combination of egg albumin and iron (3 per cent.), with 1 per cent. of lecithin. It is marketed in chocolate tablets containing 0.5 gramme of the preparation.

Ferroglidine is an organic combination of protein and iron put up in tablet form, each tablet being represented to contain gramme 0.025 of iron.

Filicone is a principle obtained from *Dryopteris spinulosa,* which is said to possess anthelmintic properties when combined with castor oil in the proportion of 30 grains of filicone to half an ounce of oil.

Formcallistan is a combination of formaldehyde and vegetable mucilage which has been tried in gout.

Formobas is a formaldehyde preparation said to have a deeper and greater bactericidal power than formaldehyde and to be free from its drawbacks. It forms a clear fluid, and its solutions are slightly alkaline.

Gastrosan is bismuth disalicylate, a sweetish powder insoluble in cold water and alcohol.

Geotalose is a form of mucocolloidal creosote, occurring as an elastic grayish green substance melting at 26° C. to a syrupy fluid that may be diluted with water. Used in diarrhœa and vomiting in adults and children.

Glandon Tablets are a compound of thyreoid gland, adonidin, and sodium cacodylate.

Glycyltryptophan (See Fermentdiagnosticum).

Guacamphol (guaiacolcamphoric acid ester) is a white powder, tasteless and odorless, which is used in the treatment of night sweats in doses of three to fifteen grains.

(*To be continued.*)

NEW YORK MEDICAL JOURNAL
INCORPORATING THE
Philadelphia Medical Journal
and The Medical News.

A Weekly Review of Medicine.

Edited by
FRANK P. FOSTER, M. D.

Address all business communications to
A. R. ELLIOTT PUBLISHING COMPANY,
Publishers.
66 West Broadway, New York.

Cable Address: Medjour, New York.

Subscription Price:

Under Domestic Postage Rates, $5; under Foreign Postage Rate, $7; single copies, fifteen cents.

Remittances should be made by New York Exchange or post office or express money order, payable to the A. R. Elliott Publishing Co., or by registered mail, as the publishers are not responsible for money sent by unregistered mail.

Entered at the Post Office at New York and admitted for transportation through the mail as second class matter.

NEW YORK, SATURDAY, JULY 16, 1910.

RECIPROCITY IN MEDICAL REGISTRATION.

Announcement has been made by the Board of Regents of the University of the State of New York that the agreement entered into with the authorities of the State of New Jersey on January 1, 1907, whereby a license in the one State would be recognized in the other, will be no longer continued. The New Jersey State Board of Medical Examiners, in retaliation, has adopted the following resolutions: *"Resolved,* That on and after November 2, 1910, further indorsement of the certificates of medical license issued by the State of New York shall be discontinued, unless the agreement of reciprocity between the States of New York and New Jersey is renewed in the interim."

The New Jersey authorities resent the action of the New York Regents, saying that the arrangement entered into on January 1, 1907, was based on results of a long and careful study of the requirements of the New Jersey board, that investigation showed that the basis of registration in the State of New Jersey was entirely satisfactory, and that in the face of such a showing it is unfair for the State of New York to reverse its attitude.

The New York authorities, in defense of their action, assert that, acting under an opinion rendered by the attorney general of the State of New Jersey, the examining board of New Jersey had admitted to their examinations men who had not received the preliminary education required by the statutes of New York State. This State requires that students must have had three years of high school work before taking up the study of medicine and must complete their high school work before receiving medical diplomas. Under the decision of the attorney general of New Jersey the student might begin his medical course without any high school training and complete his high school work during his attendance on the medical school. The physicians of New Jersey resent the action of the New York authorities and particularly resent even more the explanation which is offered, denying emphatically that there has been any lowering of the standard in New Jersey.

While there should not be any lowering of standards, it is certainly most unfortunate that any circumstances should arise which would abrogate the agreement as to reciprocity in medical licensure between the two States. There is so much interstate practice, so many physicians have patients in both States, that much inconvenience will be experienced through the enforcement of this ruling, and it is to be hoped that some arrangements can be quickly arrived at which will heal the breach between the two boards and save the public and the physicians from the awkward and sometimes embarrassing results which will follow the strict enforcement of the medical registration laws without interchange of licenses between the two States.

MUNICIPAL HOSPITALS IN THE STATE OF NEW YORK.

Heretofore, whenever a city, village, or town in the State of New York desired to establish a public hospital, it has been necessary to obtain from the legislature a special act giving it the authority to do so, and this necessity has sometimes entailed vexatious delays and tended to discourage the establishment of such hospitals. But recently "an act to amend the general municipal law in relation to the establishment and maintenance of public general hospitals for the care of the sick" has been passed by the legislature and approved by the governor. The bill was prepared by the Committee on Hospitals of the State Charities Aid Association, and the association's secretary, Mr. Homer Folks, has set forth the reasons for seeking the enactment of it.

Because of the very great and rapidly increasing cost of caring for the sick in their homes, due to increased expenditures for nursing and necessary medical attendance, as well as the increasing difficulty in securing sanitary conditions, proper diet, and care and facilities for an operation and for

postoperative care in individual homes, says Mr. Folks, the care of the sick is becoming increasingly a hospital problem. This tendency is further augmented by the fact that people tend more and more to dwell in cities and villages, in quarters so crowded that proper care of sick persons is quite impossible. It is also found increasingly necessary to move many patients from their homes to hospitals for the conservation of the health of those remaining at home. It is therefore becoming more and more apparent to those who are interested in the problems of public health that hospital facilities for the care of the sick poor must be greatly increased

It was the committee's opinion that when it became necessary for a city or village to pay considerable sums for maintaining poor patients in hospitals, it was ultimately the best policy for the city or village to establish a hospital of its own, where the expenditure of these funds would be entirely under public control and the hospital under public management.

OLD VIEWS OF MALARIA.

Dr. Victor Löwenthal, in the May number of *Janus*, says that we should give some credit to Alexander von Humboldt, who concerned himself with the causes of infectious diseases and was the first to point out their relation to insects. He quotes from Humboldt's *Voyage aux régions équinoxiales du nouveau continent,* to the effect that the people of America differed widely—like the learned men of Europe—in their opinion of the healthfulness of certain climates and conditions. Along the Magdalena River mosquitoes were considered healthful, and were believed to prevent inflammatory diseases by the bloodletting which they caused. Along the unhealthful shores of the Orinoco, on the contrary, all sicknesses were ascribed to the mosquitoes, which, the people said, grew and multiplied where there was putrefaction and set up an inflammation of the blood. The presence of gnats and flies was thought to be of importance only in so far as they grew in the same conditions which caused miasm; therefore they were an indication of the unhealthfulness of a locality. These annoying insects sought hot places with luxuriant vegetation and stagnant water, where chemical reactions took place with ease and putrefaction was hastened.

In regard to the question of whether mosquitoes contributed directly to the unhealthfulness of the air, Humboldt remarked that the great amount of organic matter in the air must give rise to miasm, when we considered that a cubic foot of air contained about a million insects, which carried some poisonous fluid, that the head and body of a culex measured a line and a half, and, finally, that the great masses of gnats and flies, which filled the air like smoke, were carried by the wind from one place to another. While making no assertion, Humboldt believed that these insects had a different action on air from that of dust and sand. We knew that at Orinoco, Cassiquiare, Rio Caura, and wherever the air was impure the bite of the mosquito predisposed to miasm.

Darwin also speaks of the origin of infectious diseases from miasm. In his *Voyage of a Naturalist Round the World* he says that hot climates and luxuriant vegetation do not always cause miasm, as certain parts of Brazil, which are very fertile and damp, are much healthier than the sterile coast of Peru, especially the suburbs of Callao, where fevers are very common. He thought the miasm must come from stagnant pools, as the city of Arica at once became much healthier after drainage was established there.

THE CUNNING OF THE ANT.

It seems that industry is not the only noteworthy characteristic of the ant. In the July number of the *Military Surgeon* there is an interesting article, entitled The Ant as a Destroyer of Flies, by Captain Percy L. Jones, of the Army Medical Corps. Captain Jones has observed that flies are comparatively rare in the Philippines, and he has ascertained that there is a species of ant which consumes the larvæ of the fly with avidity. Indeed, these ants may be said to exemplify the rustic's statement "We eat what we can, and what we can't we can." Witness the following:—

> Upon watching these ants attack fly larvæ it is interesting to note that they do so in a way which proves that they are no novices at the procedure. One will attack an extremity and apparently bite it, and as soon as the larva begins to coil and makes efforts to escape, numbers of others will immediately jump upon it, and in the course of a few moments the larva will be apparently dead. I believe that the ant introduces some venom in the act of biting, formic acid in character, which preserves the larva as food until such time as the ant needs it—cans it, in other words. As soon as the struggles of the larva have ceased, they haul it off to their nests and return for others. In many instances I have seen them carry away pupæ. It will be interesting for the reader to procure a few maggots and place them over an ant bed.

So far as is known to Mr. Banks, the official entomologist of the Bureau of Science in Manila, this species of ant is not found in the United States and, indeed, is not yet classified. Captain Jones has considered the practicability of introducing it into

countries where the extermination of the fly is destined to become an important feature of sanitation. He suggests that caution and further study of the insect's habits are needed before any such step is taken, for, besides its qualifications as a scavenger and as a destroyer of flies, it may have undesirable propensities, such as an inclination to consume materials of value—wood, for example.

This ant is said to be an energetic destroyer of bedbugs as well as of flies, and its abilities in that direction might prove of great service in ridding a community of the bug pest, which is not only loathsome, but also, under certain circumstances, highly conducive to the spread of disease. But, whatever may be the virtues of this particular species of ant, it will be well to be cautious in enlisting its services by importing it into the United States. There are many ways of slipping out of the frying pan into the fire, and one of them is by the importation of strange members of the animal kingdom to perform special acts, even when those acts are well within their abilities, in accord with their inclinations, and highly valuable in the public interest.

THE DANGER IN X RAYS.

News comes from Philadelphia that a distinguished and successful x ray operator, Dr. Mihram K. Kassabian, whose work has often been used to illustrate articles in the *New York Medical Journal,* has died from malignant disease imputed to x ray burns. It is most regrettable that a man who had done such excellent work and who had shown himself to be so thoroughly informed as to the action of this therapeutic agent should have failed to take sufficient precautions to protect himself from the untoward effects which almost surely follow prolonged exposure to the rays. It will be remembered that the x ray has been assigned as the cause of the death of several operators, and considerable litigation has grown out of the claims for damages due to the alleged unwise or unskilful use of the agent. It has been asserted that exposure to the x ray has produced sterility in the male, and, though the assertion has been denied, many practitioners still fear the effects of continued exposure on the reproductive organs, and it is certainly well worth while to take proper precautions to prevent the possibility of any such action.

The history of the therapeutic use of the x ray does not differ widely from that of other agents whose introduction has been acclaimed as the wonder of the century. Its users at first alleged for it the most miraculous powers combined with absolute safety. The limitations of its usefulness have been more and more clearly defined and, unfortunately, allegations of its harmlessness have been quite clearly disproved. It is to be hoped that the sad lesson which we have learned from the careless use of the x ray will not be forgotten with the next novelty in therapeutics which is presented to us.

THE ASTOUNDING RESULTS OF SEXUAL IGNORANCE.

Recently a case of sexual violence committed by a young man upon his twenty-four hours' bride was seen in its effects by a physician. The young man had been instructed how "to get married" by some person or persons, and, in order to do what he was told, he had violent and repeated relations with the girl, and so violent and repeated were his relations as to produce the practical effects of a rape. At the home of her parents the girl is recovering from the experience.

Now, in the name of common sense what were her parents doing? The father of the boy had been dead some years. They were aware of the necessity of some help to the animals of the barnyard; no farmer breeds at random, and he frequently guides a young stallion or bull in the sexual act. But in the instance of a child the idea of assistance is apparently not entertained. The ardor of the young husband cannot be condemned. That he was physically strong and in his lusty habit might do harm to the delicate child he married were of course to be expected; but the expectation was disregarded, and the harm occurred. Now on the part of the parents of the girl much anger has been vented. But the boy did not know so much as he now does, and those who might have advised him so joked him that he erred. A practical joke of this sort is a virtual crime. It is a crime because it leads to the commission of a wrong in the nature of an assault and battery.

The condition of the young wife, when first seen by her parents, was such as to lead them to think that a venereal disease had been transmitted to her by her husband. But after an examination this was found untrue. So that the first rage expended was unjust. The moral shock to the young husband is of course minor to that of the wife. But it, too, is deserving of pity. The dramatis personæ of this occurrence happen to consist of a father and mother of about sixty years, a boy of eighteen, and a girl of seventeen. We shall probably continue to instruct our school children how to find the compound interest on a million dollars for three years at six per centum, while omitting to tell them of some of the elementary needs of actual life.

News Items.

Changes of Address.—Dr. Leonard Weber, to 132 West Seventy-third Street, New York.

Dr. Emma T. Miller, to 315 Brooklyn Avenue, San Antonio, Texas.

A New Hospital Opened in Milwaukee.—St. Mary's new hospital, Milwaukee, was opened with suitable ceremonies on June 30th. The old building will be torn down.

Tuberculosis Camp on a Hospital Roof.—A summer camp for tuberculosis patients has been opened on the roof of the New York Throat, Nose, and Lung Hospital, at 229 East Fifty-ninth Street, New York, where sufferers from tuberculosis who are unable to leave the city during the warm weather will receive proper care and treatment.

A New Site for a Brooklyn Hospital.—The Board of Estimate has authorized the purchase of a new site for the old Bradford Street Hospital, which is maintained by the Charities Department in East New York. The situation decided upon is at Pennsylvania and Livonia Avenues, covering a square block, and the purchase price will not exceed $36,100.

The Jersey City Board of Health to Open Dispensaries.—The Board of Health of Jersey City, N. J., has decided to open free dispensaries in that city instead of free milk stations, as planned several weeks ago. A committee has been appointed to attend to the matter of the location of the dispensaries and the appointment of physicians to take charge of them.

The Washington Heights Hospital Dispensary.—Announcement is made by the superintendent of the Washington Heights Hospital, 554 West 165th Street, New York, that there is a vacancy in the medical and surgical department of the dispensary. This dispensary is open on Tuesdays, Thursdays, and Saturdays, from 2 to 4 p. m. Applications should be sent to Dr. L. Neuwelt, 2424 Seventh Avenue, New York.

The International Hahnemannian Association met in annual session in Kansas City, Mo., on June 28th, and elected the following officers for the ensuing year: President, Dr. M. W. Turner, of Brookline, Mass.; vice-president, Dr. C. A. Putnam, of Kansas City, Mo.; secretary, Dr. J. B. S. King, of Chicago; treasurer, Dr. P. E. Krichbaum, of Montclair, N. J. The next annual meeting will be held in Asbury Park, N. J., in 1911.

The Clinical Staff of the Henry Phipps Institute.—The Board of Directors of the Henry Phipps Institute, of the University of Pennsylvania, recently elected the following physicians as members of the clinical staff of the institute: Dr. H. R. M. Landis, Dr. J. D. Blackwood, Jr., Dr. J. W. Busch, Dr. F. A. Craig, Dr. J. M. Cruice, Dr. W. T. Cummins, Dr. G. Fetterolf, Dr. I. Kaufman, Dr. C. M. Montgomery. Dr. H. J. Off, Dr. J. T. Ullom, Dr. M. Jacobs, Dr. W. Turnbull. These men will have charge of the treatment of the dispensary patients and of patients in the wards of the institute.

The Harvard Medical School Reception.—Over four thousand members of the National Education Association attended the reception given in their honor by the Harvard Medical School, on the grounds of the school, on Wednesday, July 6th. There were three receiving lines, one of which was headed by Governor Draper and Mrs. Draper. One line represented the Harvard Medical School, and in this line were Dr. H. M. Christian, dean of the school; Dr. Henry Walcott, chairman of the Boston Board of Health; Dr. Richard C. Cabot, superintendent of the Massachusetts General Hospital, and Dr. Samuel F. Mixter.

The British Medical Association will hold its seventy-eighth annual meeting in London, July 22d to 29th. The scientific business of the meeting will be conducted in twenty-one sections, which will meet on July 27th, 28th, and 29th. The Address in Medicine will be delivered by John Mitchell Bruce, M. D., F. R. C. P., of London, and the Address in Surgery by Harry Gilbert Barling, B. S., F. R. C. S., of Birmingham. Sir William Whitla, professor of materia medica and therapeutics, Queen's College, Belfast, is president of the association; Dr. H. T. Butlin, consulting surgeon to St. Bartholomew's Hospital, London, is president-elect; and Dr. Sinclair White, senior honorary surgeon, the Royal Infirmary, Sheffield, is past president.

Plans for Improvements in Philadelphia Hospitals.—In his annual budget of expenditures for the year 1911, Dr. Joseph S. Neff, director of the Department of Health and Charities, outlined a broad constructive policy, and included in his recommendations an appropriation of $5,000,000 for the development of Byberry as the home for the city's insane wards. He also asked for $100,000 for the construction of an annex for the feebleminded at Byberry and $300,000 for improvements at the Philadelphia General Hospital. If his plans for the Philadelphia hospital are carried out, it will be one of the most complete institutions of its kind in this country. The director also asked for $500,000 to complete the Hospital for Contagious Diseases.

Government Sanatorium May Have to be Abandoned.—It is reported that the Government Sanatorium for Consumptives, at Fort Stanton, New Mexico, may be abandoned, as a result of the exhaustion of the water supply. The Government has invested more than a million dollars in this institution, over which the Public Health and Marine Hospital Service exercises jurisdiction. Until a recent period the Fort Stanton hospital had an abundance of water. Its supply has been virtually cut off as a result of the action of a railroad in that vicinity piping the water to a point thirty miles beyond for use in locomotives. The local officers have informed the Secretary of the Treasury that unless measures are adopted to secure water the Fort Stanton hospital will have to go out of commission.

A Department of "Non-pharmaceutic Therapeutics" at Temple University.—Announcement is made that Temple University, Philadelphia, has completed arrangements for the establishment of a department for teaching methods of healing without drugs. It is said that this is the first instance of such a department being established in a medical school. This new department has been given the name of "non-pharmaceutic therapeutics," and will include radiotherapy, electrotherapy, suggestion, massage, baths, etc. Dr. J. Madison Taylor will have charge of the department, and will also hold an adjunct professorship to the chair of therapeutics, which is filled by Dr. Charles E. de M. Sajous. Dr. Taylor has gone to Europe where he will study the methods in vogue there for the treatment of disease without the use of drugs.

The Importance of Pædiatrics.—The report on curriculum which was presented at the meeting of the Association of American Medical Colleges, held in Baltimore, last March, brought out two important points, namely, the importance of pædiatrics as a part of the curriculum of medical colleges, and the recognition of the surgical diseases of children as a department of study. This report placed the minimum number of hours to be devoted to pædiatrics at fifty, an increase of fifty per cent. over present requirements, and yet was a very modest share of the four thousand hours of the clinical years (the third and fourth) of the college course. Dr. D. H. Arnold, of Boston, was chairman of the subcommittee on curriculum for the clinical years, and Dr. S. W. Kelley, of Cleveland, the member representing pædiatrics. Valuable suggestions in relation to the teaching of pædiatrics are included in an appendix to this report.

Personal.—Dr. Harvey Cushing, of Johns Hopkins University, has been appointed professor of surgery at the Harvard Medical School. His appointment to the position of surgeon in chief of the Beter Bent Brigham Hospital, Boston, was announced several weeks ago.

Dr. William Stockwell, of Sheffield, Conn., has been appointed medical superintendent of the New State Tuberculosis Hospital, at Shelton.

Dr. F. E. Darling, of Milwaukee, has resigned as register of vital statistics in the health department.

Dr. Lewis Ryans, of Louisville, Ky., has been sworn in as United States Deputy Marshall for the western district of Kentucky.

Dr. Hugo Münsterberg, professor of psychology at Harvard University, sailed for Europe on July 2d. He will be the Harvard exchange professor with the University of Berlin next year.

Cambridge University has conferred the degree of doctor of science on Sir Oliver J. Lodge, principal of the University of Birmingham.

Dr. Albert C. Crawford, of the Bureau of Animal Industry, has been appointed professor of pharmacology at Stanford University, and Dr. Hans Zinsser, of Columbia University, has been appointed associate professor of bacteriology in the same institution.

New Jersey to Bar Out New York Doctors.—As the result of a recent order of the New York State Board of Regents refusing to recognize New Jersey physicians' licenses unless their holders were also practitioners in New York State, the Board of Medical Examiners of New Jersey has retaliated in kind by passing this resolution:

Resolved, That on and after November 2, 1910, further indorsement of the certificates of medical license issued by the State of New York shall be discontinued, unless the agreement of reciprocity between the States of New York and New Jersey is renewed in the interim.

Heretofore New Jersey doctors wishing to practise in New York could have their licenses accepted upon presentation for indorsement by the proper New York authorities. This reciprocity agreement was entered into on January 1, 1907, and remained in effect until about a month ago. Formal requests for a reconsideration have been made upon Augustus S. Downing, First Assistant Commissioner, New York State Education Department.

An Active Campaign Against Tuberculosis in Baltimore is being planned by the Municipal Tuberculosis Commission. At a meeting of the commission held on Saturday afternoon, July 9th, on recommendation of the committee appointed to consider the matter, Mr. Alexander M. Wilson was appointed acting secretary of the commission. Mr. Wilson is head of the sociological department of the Phipps Institute for the Study and Prevention of Tuberculosis, in Philadelphia, and will divide his time between that city and Baltimore. One matter which will receive the special consideration of the commission will be that of hospital accommodation for tuberculous patients. It is said that at present the institutions can accommodate only a small proportion of the persons suffering from the disease. The question of establishing dispensaries in different sections of the city will also receive attention. The members of the commission are: Dr. John S. Fulton, chariman; Dr. Thomas McCrae, and Dr. Harry Friedenwald, and Messrs. Harry S. Dulaney, Robert Biggs, and J. B. Noel Wyatt. Mayor Mahool is chairman ex officio.

Changes in the Medical Faculty of McGill University.—Dr. William Gardner has resigned from the chair of gynæcology, which he has held since 1883. He will be appointed emeritus professor. Dr. J. G. McCarthy, professor of medical and surgical anatomy, has also severed his connection with the faculty. Dr. T. Wesley Mills, professor of physiology for twenty-five years, has resigned on account of ill health, and Dr. W. S. Morrow, assistant professor of physiology, has also resigned, to take up private practice. Dr. Oscar Klotz, lecturer in pathology and bacteriology, and pathologist to the Royal Victoria Hospital, was recently called to the professorship of pathology in the reorganized medical school at Pittsburgh. Dr. S. B. Wolbach, lecturer in histology and pathology, and pathologist to the Montreal General Hospital, has resigned to accept a position in Harvard University. Among the new professors who will take up work at McGill University in the fall are Dr. J. C. Simpson, who will be associate professor of embryology and histology, and Dr. Willy, who will be professor of zoology. Dr. Oskar C. Gruner, clinical pathologist to the General Infirmary, Leeds, England, has been appointed lecturer on pathology, and pathologist to the Royal Victoria Hospital.

Changes in the Medical Faculty of the University of Pennsylvania.—The trustees of the University of Pennsylvania have announced certain changes in the personnel of the teaching staff, to go into effect at the beginning of the next academic session, September 1st. To fill the chair of theory and practice of medicine, made vacant by the resignation of Dr. James Tyson, Dr. David L. Edsall has been transferred from the chair of pharmacology and therapeutics, and the vacancy in the latter will be filled by the appointment of Dr. A. N. Richards, now professor of pharmacology in the medical school of the Northwestern University, Chicago. $100,000 has been received for the endowment of a chair of physiological chemistry, and Dr. Alonzo Englebert Taylor, of the University of California, will be its first occupant. Dr. Richard M. Pearce, of the University and Bellevue Hospital Medical College of New York, has been appointed professor of pathology. Dr. Pearce will also direct the work of the department of research medicine recently established by an endowment of $200,000. Dr. Allen J. Smith, the present dean of the medical school, will be the occupant of the new chair of comparative pathology and will be at the head of the newly instituted courses in tropical medicine. Dr. Paul Lewis, who will have charge of the laboratory of the Phipps Institute for the Study, Prevention, and Treatment of Tuberculosis, now an integral part of the university, has been elected assistant professor of pathology.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Department of Health for the following statement of new cases and deaths reported for the two weeks ending July 9, 1910:

	July 2d		July 9th	
	Cases.	Deaths.	Cases.	Deaths.
Tuberculosis pulmonalis	493	158	452	149
Diphtheria and croup	371	26	418	36
Measles	623	20	434	12
Scarlet fever	236	13	177	15
Smallpox	2	..	..	..
Varicella	95	..	31	..
Typhoid fever	45	13	51	10
Whooping cough	57	4	48	15
Cerebrospinal meningitis	2	2	5	5
Total	1,924	236	1,616	242

Vital Statistics of New York.—During the week ending July 2, 1910, the deaths from all causes reported to the Department of Health of the City of New York numbered 1,359, corresponding to annual death rate of 15.04 in a thousand of population, as compared with a rate of 15.81 in the corresponding week in 1909. The annual death rate for the week in each of the five boroughs was as follows: Manhattan, 13.94; the Bronx, 17.06; Brooklyn, 15.52; Queens, 15.98; Richmond, 26.98. There were 129 stillbirths. The deaths of children under five years of age numbered 499; 344 under one year of age, 94 between one and two years of age, and 61 between two and five years of age. The deaths from diarrhœal diseases under five years of age numbered 186; over five years of age, 199. There were 10 deaths from sunstroke, 22 suicides, 6 deaths from homicide, and 78 from accidents.

The Health of Philadelphia.—During the week ending June 4, 1910, the following cases of and deaths from transmissible diseases were reported to the Department of Health of Philadelphia: Typhoid fever, 24 cases, 4 deaths; scarlet fever, 62 cases, 5 deaths; cerebrospinal fever, 1 case, 1 death; erysipelas, 6 cases, 2 deaths; chickenpox, 51 cases, 0 deaths; diphtheria, 76 cases, 10 deaths; measles, 327 cases, 1 death; whooping cough, 45 cases, 3 deaths; pulmonary tuberculosis, 114 cases, 56 deaths; pneumonia, 26 cases, 41 deaths; tetanus, 1 case, 0 deaths; trachoma, 1 case, 0 deaths; mumps, 14 cases, 0 deaths. There were 9 deaths from tuberculosis other than that of the lungs, 2 deaths from puerperal fever, and 24 deaths from diarrhœal diseases under two years of age. There were 32 stillbirths, 16 males and 16 females. The deaths of children under five years of age numbered 115; 73 under one year of age, 23 between one and two years of age, and 19 between two and five years of age. The deaths from all causes numbered 433 in an estimated population of 1,500,595, corresponding to an annual death rate of 14.09 in a thousand of population.

The Health of Chicago.—During the week ending July 2, 1910, the following new cases of and deaths from transmissible diseases were reported to the Department of Health of Chicago: Typhoid fever, 11 cases, 7 deaths; measles, 274 cases, 12 deaths; German measles, 20 cases, 0 deaths; whooping cough, 39 cases, 3 deaths; scarlet fever, 96 cases, 7 deaths; diphtheria, 112 cases, 15 deaths; chickenpox, 31 cases, 0 deaths; tuberculosis, 131 cases, 85 deaths; pneumonia, 34 cases, 69 deaths. Sixteen cases of contagious diseases of minor importance were also reported, making the total number of cases reported, 764. The deaths, under two years of age, from diarrhœal diseases numbered 50. There was one death from cerebrospinal fever, 9 deaths from sunstroke and 18 deaths from congenital defects and accidents. The total deaths of children under five years of age numbered 166, of whom 99 were under one year of age. The total deaths from all causes, exclusive of stillbirths, numbered 586, corresponding to an annual death rate of 13.4 in a thousand of population, as compared with a death rate of 14.4 for the preceding week, and 11.5 for the corresponding week in 1909.

The New Detention Hospital on Hoffman Island.—Nearly a million dollars have been spent by New York State in enlarging Hoffman Island to about three times its original size, to make room for new hospital buildings to accommodate persons with contagious diseases coming into the Port of New York. The new hospital, which will have accommodations for 250 patients, will be ready for occupancy in the fall, it is expected. Besides the hospital there has been provided a hotel for the use of the friends of the patients. The main building of the new hospital will be surrounded by pavilions for the treatment of various contagious diseases, built in such a way as to make expansion possible. Special arrangements have been made for efficient disinfection. These pavilions are also designed to give the maximum of fresh air to the patients, and a fresh air plaza has been built in connection with the main building for winter use. One of the features of the New State hospital will be the school of instruction in the treatment of infectious diseases. Every four days two health officers from various parts of the State will be assigned to the hospital to study contagious diseases and their treatment. A permanent corps of State officers will carry out the system of instruction, and a training school for nurses will be maintained.

Plague Prevention Work in California.—Passed Assistant Surgeon McCoy, of the Public Health and Marine Hospital Service has reported to the surgeon general of the Service that on June 8th six hunters were sent to the southern part of the State to work in Los Angeles County and the counties immediately adjacent. These men have been placed directly under the supervision of Assistant Surgeon Friench Simpson. On account of the squirrels from this section reaching the laboratory at San Francisco in rather bad condition, and on account of the very heavy cost of shipping squirrels from such a great distance, a branch headquarters and laboratory have been established in Los Angeles and a well trained laboratory assistant from San Francisco has been placed in charge of the examination of rodents there. Tissues from any rodents that he regards as suspicious will be forwarded to San Francisco for a complete bacteriological examination. Eleven plague infected squirrels have been reported found in California as follows: In Alameda County, 4; in Monterey County, 2; in San Benito County, 4, and in Santa Clara County, 1. Dr. McCoy also reports that the last case of human plague in San Francisco, sickened on January 30, 1908, and the last case of rodent plague trapped October 23, 1908. The total number of rats found infected to date was 398.

International Hygiene Exhibition.—From May to October, 1911, there will be held in Dresden a comprehensive and universal exhibition which will bring before the professional world and the general public the wonderful advancement in the science of hygiene, during the past few years. Judging from the very elaborate programme, which has already been issued, this exhibition promises to be very interesting and instructive. It will afford ample and favorable opportunity to study all phases of personal and social hygiene, and laymen as well as sanitarians, physicians, and legislators will enjoy it. It has a two fold object: To present to hygiene specialists, physicians, adminstrative officers, teachers, etc., the results of the latest hygienic investigations, and to impart hygienic instruction to the people. The exhibition has been divided into twelve groups, as follows: 1, Air, light, soil, water; 2, settlement and dwellings; 3, nutrition and food stuffs; 4, clothing and care of the body; 5, professions and trades; 6, infective diseases; 7, care of the sick and life saving; 8, children and adolescents; 9, traffic; 10, military hygiene; 11, hygiene for the tropics; 12, statistics. In addition to these main groups are the following special groups: Tuberculosis, alcoholism, venereal diseases, cancer, and diseases of the teeth. There will also be a historical department in which will be comprised all the hygienic achievements of former ages and nations. His Majesty the King of Saxony has assumed the protection of the exhibition, and the Imperial Chancellor has consented to head the list of honorary presidents. The presidents of the various groups are chosen from the ranks of German scientists, while prominent men of all nations will be represented among the honorary presidents and members of the committees. The officers of the exhibition are at Zwickauer Strasse 35, Dresden.

Pith of Current Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL.

June 30, 1910.

Methods of Treatment in Infantile Paralysis,
By E. H. Bradford, R. W. Lovett, E. G. Brackett, Augustus Thorndike, Robert Soutter, and Robert Osgood.

1. **Infantile Paralysis.**—The authors remark that infantile paralysis is an infectious disease and can be transmitted to monkeys by inoculation with the emulsion of cord and brain tissue from human beings and from monkeys dying with the disease. The virus is contained in the brain and spinal cord, the mucous membrane of the nasopharynx in infected lymph nodes, in the salivary glands, and, in the acute stage, in the cerebrospinal fluid and the blood. The disease may be produced by intracerebral, intraperitoneal, subdural, intraneural and perineural, and subcutaneous injections, and by implantation in the anterior chamber of the eye. The disease has been caused by the introduction of the virus into the stomach by means of a catheter, and into the intestines, the peristalsis being prevented by opium. The disease has also been caused by scarifying the nasal mucous membrane and rubbing the virus into the injured membrane (Flexner and Lewis) and through the sound membrane by Leiner and Wiesner, who also succeeded in producing it by inhalation of an emulsion containing the virus, and by implantation in the trachea. It would seem, therefore, as if the disease might, in human beings, enter through either the respiratory or digestive tract. All investigators who have discussed the matter agree that the intracranial route is the best for inoculation, parallel experiments having shown the marked superiority of the former. The virus is filterable, which places the disease in the category with foot and mouth disease, pleuropneumonia, yellow fever, and other diseases less well known. The virulence of an emulsion is not impaired by drying, by freezing, nor by suspension in glycerin, but it is injured by exposure to a temperature of from 45° to 50° C. That one attack of the disease confers immunity seems generally admitted. The serum of healthy monkeys does not immunize against an attack, but that of monkeys who have had the disease does antagonize the virus of subsequent inoculations. As to bacterial findings of previous authors, the latest investigations have been almost wholly negative and, having found an invisible organism which causes the disease, the previous inconstant data with regard to bacteria may be disregarded for the present. The authors then speak of the treatment in: 1. The early stage of acute onset and fever; 2, the subacute stage; and, 3, the stage of established paralysis and convalescence. The question of nerve grafting in infantile paralysis is treated by Osgood. He remarks that it would be conservative and fair to advise in general that no neuroplastic operation should be undertaken until all contractures had been overcome and until over stretched paralyzed muscles had been placed at rest and allowed to "take up slack," and usually not until nine months or a year from the onset of the paralysis had elapsed. The muscles must be properly massaged and their circulation maintained during interval. In

traumatic cases there are on record many successful returns of power resulting from operations undertaken over a year from the time of injury. The return of power and sensation in divided and resutured nerves has been carefully studied by several observers. No quick return seems possible, certain reports to the contrary. Two and one half months at least must elapse before any evident return motion may be expected. From the time of first appearance we may expect improvement for fifteen months to two years, depending largely upon the after training and the repeated efforts of the patient to send motor impulses down the new path. He says that the number of cases of poliomyelitis in which the distribution of the paralysis is such as to offer a fair chance of improvement from neuroplastic operations is probably small. Until further laboratory work has been done on the experimentally produced poliomyelitis in animals, or until chance has offered more opportunity of judging results in human beings we should most cautiously undertake nerve grafting. In attempting this procedure we should at present confine ourselves to operative methods by which, if the end sought is not gained, we shall at least not have added disability to that already existing, and we should have constantly in mind the maxim of Ambrose Paré that the first duty of the surgeon is to do no harm.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

July 9, 1910.

1. Radium's Contribution to Surgery, By Robert Abbe.
2. Purpura Caused by the Ingestion of the Iodides, By Frank Crozer Knowles.
3. Dermatitis Exfoliativa, By William Frick.
4. The Nervous Unfit, By S. S. Crockett.
5. Prescribing of Lenses for Close Work, By Mark D. Stevenson and E. M. Weaver.
6. Educational Work in Reducing Infant Mortality, By Wilbur C. Phillips.
7. The Present Status of the Ætiology of Squint, By William Zentmayer.
8. The Normal Variation of the Systolic Blood Pressure. A Study of 1,000 Cases, By H. P. Woley.
9. The Advancement Operation in Squint, By Vard H. Hulen.
10. A New Cartilage Knife for Use in the Submucous Resection of the Nasal Septum, By Alfred M. Murray.
11. Preliminary Report of Work on Clot Culture, By Loyal A. Shoudy.
12. A New Combination Mouth Gag and Tongue Depressor, By F. H. Brandt.
13. Thread Worms in the Appendix; Report of Two Additional Cases, By J. M. Allen.
14. A Simple and Inexpensive Device to Prevent the Contamination of Sterile Solutions, By A. G. Bettman.
15. Excessively High Temperature in a Case of Incipient Pulmonary Tuberculosis, By O. H. Brown.
16. Prolonged Use of Epinephrin in Asthma, By J. M. Hall.

1. **Radium in Surgery.**—Abbe reviews his results achieved with radium. He remarks that what has been accomplished in epitheliomata of all grades, ulcerated or not, when situated on the skin, is that a healing and disappearance of the growth promptly follows a correct dosage of radium rays. Sometimes a slight recurrence showing an insufficiency of the first dosage, is at once overcome by renewed treatment, not more surprising than that malaria will recur when too little quinine has been given. If we could accomplish the same results on the epithelial cancer of the wet surfaces as on the skin we might rejoice. But no such conquest can yet be claimed. Epithelial cancer of the lip, tongue, tonsil, pharynx, inside of the cheek, œsophagus, stomach, rectum, and uterus, are still the *bête noire* of the surgeon in spite of radium. A trial of this unique agent has been given in a large variety of morbid conditions, and necessarily in rather a desultory way, as leaders for research. It has been demonstrated, he remarks, beyond question that radium exerts a beneficent action on many varieties of glandular hyperplasias, notably on some goitres. Also sarcomata of the parotis, in which, of all surgical conditions, we need more efficient surgical help. In trachoma and obstinate vernal catarrh also there have been demonstrated some brilliant cures. In short, there has been shown the existence of a subtle force latent in radium, resembling that in Röntgen rays, but unlike it and supplemental to it, with specific action for certain cells found in specialized tumors, which causes retrograde degeneration and atrophy. The cases are not yet sufficiently numerous nor long enough studied to classify in groups warranting definite promise of uniform results. The careful scientific study by four radium institutes now established in France, Germany, England, and America promises ultimately to clear the atmosphere of doubt, and formulate definite rules guiding its correct usage.

2. **Purpura from Iodides.**—Knowles gives his experience with the iodides, the treatment resulting in purpura in sixty-three cases. The drug was administered in cases of syphilis, of rheumatism, and in numerous other conditions, none of which apparently exerted any predisposing influence. The quantity of the drug given and the length of administration varied so markedly that an average dose or the length of time of continuance cannot be stated, the personal element alone deciding the question of an eruption. The eruption was chiefly of one type, either the petechial or the hæmorrhagic bullous, although in a few cases other forms of iodide lesions were present. In the hæmorrhagic bullous cases, although in several the eruption was somewhat generalized, the face and the extremities were mostly involved, particularly the face and the arms. In the petechial type the eruption in a great majority of the cases was limited to the lower extremities, particularly the lower portion of the legs; in a few cases, however, the outbreak was somewhat generalized or noted on the upper as well as the lower extremities. Knowles concludes that the various salts of iodine are all capable of causing a purpuric eruption. The pathological changes of the skin were noted in the immediate vicinity of the bloodvessels and in the walls of the vessels themselves. Iodine is rapidly absorbed by all mucous and serous surfaces and rapidly eliminated, chiefly by the kidneys and also through the skin itself. The leucocytes play a distinct rôle in the absorption of the drug. He makes a plea for smaller doses and states that purpuric eruptions caused by the ingestion of the iodides may be divided into two provisional groups. The first group includes the extensive petechial and hæmorrhagic bullous cases, which occur in those individuals with organic disease, par-

ticularly of the kidneys or the heart, or with a lowered condition of the general economy, making them more susceptible to the effect of the drug, or with a strong idiosyncrasy to the same. The second group includes all cases with a localized distribution, particularly those in which the eruption is limited to the lower extremities or the lower legs, which occur in those individuals in perfect health, and which can be explained only on the theory that a mild idiosyncrasy to the iodide is present. Sex and age have nothing to do with the occurrence of the eruption, although most of the cases developed during middle life, and a considerably larger percentage of males were attacked than females.

MEDICAL RECORD.

July 9, 1910.

1. Progress in Medical Education, By Jacob Gould Schurman.
2. The Hereditary and Congenital Causes of Exceptional Development, By Edward Livingston Hunt.
3. The Paradox of the Tubercle Bacillus, By Ira Van Gieson.
4. The Use of Internal Aluminum Splints in the Treatment of Fracture, By William S. Thomas.
5. Tonsil Research, By Richard B. Faulkner.
6. Anæsthesia in Its Relation to the General Practitioner, By H. W. Kearney.
7. The Enema—Its Place in the Treatment of Gastro-intestinal Diseases, By Charles J. Drueck.
8. Preliminary Report of a Statistical Analysis of over 43,000 Cases of Diphtheria, By Mary Sallom.

2. Hereditary and Congenital Causes of Exceptional Development.—Hunt says that the causes which affect development, the factors which make posterity abnormal and unusual are largely those introduced and brought about by man. They result from the diseases which he has contracted through centuries, the poisons which he has imbibed, and the artificial surroundings and foreign environment which he has built up for himself. Nature does play some part in the development of exceptional individuals. It is, however, only in the direction of her usual course and in the execution of certain of her laws in which she is inexorable. Nature is doing more than this. She is ever striving to bring about the normal. When elements of great degeneracy appear through the operation of certain other factors, Nature soon renders succeeding generations sterile. A defect in the ancestry, a pathological condition in the preceding generations is the most frequent, the most important, and the most constant cause of defective mentality in the next and succeeding generations. Of all the causes of a morbid heredity, two stand out preeminent—idiocy and insanity. The one a mental defect, the other a mental disease. Each tends to transmit a most lasting and a most blasting heritage. Each attacks the entire structure, poisoning alike the mental, the moral, and the physical. Each enfeebles the judgment, each exaggerates the sexual impulse. Each tends to unite with any other latent neurosis. And finally each tends to transmit for many years. There are probably no human characteristics so baneful and none so readily transmissible as idiocy, imbecility, and insanity. Another hereditary factor is epilepsy. There are few diseases which exercise a more baneful effect on posterity. A heritage of epilepsy is most easy to transmit; it is most difficult to eradicate; it may remain latent and skip a generation, but it always leaves its impress; it may reappear as epilepsy or it may bequeath to the next generation a neurosis, alcoholism, or a more definite stigma of degeneracy. The child of the epileptic is almost sure to present exceptional characteristics. Therefore, epilepsy should be regarded as being a prominent factor in the production of the exceptional child. Of the diseases which tend to produce exceptional children the tuberculous is the most important. No disease does more to lower the tone and to lessen the physical forces than phthisis—the white plague. Cancer, goître, and diseases of the cardiovascular system have been given a place by writers on the subject. They do weaken the body structure; they must tend to bring into the world tissue that is far from normal. As to consanguineous marriage Hunt thinks that it is not in itself a cause of exceptional development; it may become so, but only when the two contracting parties are descendants of defective stock. The consanguineous marriages serve to accentuate the family characteristic, be that characteristic good or bad. If the family trait is weak mindedness the next generation will, as a result of the intermarriage, be more degenerate still; if, on the other hand, the family trait is mental strength, the next generation will be fully up to that standard, if not above it. As to alcohol, he says that there can be no doubt that the succeeding generations of alcoholic parents are weakened physically, morally, and mentally. Alcohol weakens the resisting powers of the different cells of the body; it forms an hereditary neurosis; it destroys the healthy tissues; it prepares the way for the unusual, for weakened and for degenerate conditions. It does more than this; it conveys its baneful effects to the next generation and sometimes to the third and even the fourth. It is often the direct cause of such conditions as epilepsy, migraine, and conditions of great depression. Syphilis is not a factor of great importance in the causation of exceptional children. There are scarcely any observers who have given it a place of more than two or three per cent. There is no doubt but that it does have the effect of lowering the vitality and weakening the powers of the cells. In the instances, however, in which syphilis is found there are frequently other and more drastic causes. One of the main reasons for the low percentage which syphilis occupies as an ætiological factor no doubt lies in the fact that Nature herself rebels at the prospect of transmitting the syphilitic heredity. She takes her own measures to remedy the impending evil. She produces stillbirths and short lived offspring; oftener she blasts the unfortunates with the curse of sterility and miscarriage. Syphilis is more apt to be an indirect factor; the results not appearing until the third or fourth generation.

7. The Enema.—Drueck, in speaking of colonic lavage, says that in the treatment of cholera infantum and cholera morbus a hot enema (110° F.) may be given after each stool to remove the irritating and infectious material from the colon and reduce the frequency of the stools. To this may be added any necessary astringents, such as zinc sulphate, 1 to 3 grains to a 6 ounce enema, or an equal strength

of silver nitrate or lead acetate, or 3 drachms of bismuth subnitrate. Where there is a great deal of griping pain 2 to 4 drops of laudanum may be given in 2 drachms of starch water. To reduce the fever a cold enema may be given, that is an enema at 70° F. For collapse a large warm coloclyster at 100° F. should be administered and retained. When the pain in the bowels is not due to inflammation but rather to pent up intestinal gases or to enteralgia, the hot rectal irrigation gives good results. The water should be from 100° to 125° F., beginning at 100° and raising to 125° F. Normal salt solution (1 drachm to 1 quart of water) is better than plain water to relieve local irritation. Also in oophoritis and salpingitis. If, however, the rectal irrigation is not convenient, the hot enema can be given, that is an enema of a temperature of from 110° to 120° F. One or two pints of hot water is injected into the sigmoid and colon and retained for five minutes. It is then expelled and more injected. This is repeated three to six times. The whole treatment may be repeated two or three times each day. The rectal tip of the syringe will suffice and the rectal tube is not necessary. The patient rests on her back to prevent the water passing high up in the bowel. With the rectal irrigator the hot solution flows out continuously as it enters. It does not distend the tissues but bathes all of the parts with the same temperature during the whole treatment. In colitis he uses a quart of water at 110° F. containing one half drachm of sodium bicarbonate and sodium chloride and flushes out the colon twice daily. After each bowel movement a simple enema at 98° F. should be given. To relieve the pain and inflammation a cold enema at 60° F. to be retained five or ten minutes or, a cold rectal irrigation should be given. This procedure may be repeated hourly, if needed. In chronic diarrhœa he gives an enema of one half pint of cold water at 98° F. to be retained. To reduce the bacterial growth one or two large hot coloclysters should be given each day and followed with a small coloclyster of one pint containing gallic, or tannic, acid 1 drachm. For the pain in the abdomen a hot enema at 110° F. after each stool is useful. For the alternate constipation and diarrhœa a large, warm, simple, or soap coloclyster at 98° F. twice a week, followed by one pint of cold enema is advised. In the treatment of constipation the enema serves a great many different purposes, but it must be judiciously employed or it may cause more damage than good. Where the constipation is due to atony of the bowel, due to loss of nerve sensibility, the hot enema at 110° F. for fifteen seconds followed by the cold enema at 60° F. for fifteen seconds twice a day after breakfast, and at night, accomplishes a great deal. Or we may use the rectal irrigation. To increase the peristalsis the cold enema and the graduated enema by which the bowel is stimulated, or a gradually lessening enema is of much use. We should always avoid completely emptying the colon and also use a small cold enema instead of a large quantity of warm water, except when needed to relieve autointoxication, or to remove hardened or impacted fæces. To remove fæcal masses the hot coloclyster or enema of soap, oil, or glycerin (glycerin 1 to water 4 ounces) should be used.

BRITISH MEDICAL JOURNAL.

June 25, 1910.

1. Remarks on the Bionomics of Helminths, By William Nicoll.
2. On Recurrent Motor Paralysis in Migraine, with Report of a Family in which Recurrent Hemiplegia Accompanied the Attacks, By J. Michell Clarke.
3. On the Value of Sera and Vaccines in the Treatment of Disease, By Nathan Raw.
4. A Clinical Method of Measuring the Antitryptic Index, Illustrated by Its Response to Vaccines, By Frank C. Eve.
5. On the Value of Test Meals as a Guide to Infant Feeding, By Ronald Carter.
6. Ovarian Grafting and Menstruation, By T. Tuffier and E. Seymour Chapman.
7. A Case of Sleeping Sickness Showing Regular Periodical Increase of the Parasites Disclosed, By Ronald Ross and David Thomson.

1. **Bionomics of Helminths.**—Nicoll says that one of the first outstanding principles in helminthology is the fact that, with comparatively few exceptions, the definite or final host is a vertebrate. The exceptions are to be found among certain insects and myriapods which harbor adult mematodes, but no case is known of an invertebrate serving as the final host of a cestode or trematode. On the other hand, vertebrates and invertebrates alike may function as intermediate hosts. Generally speaking, therefore, invertebrates are parasitized only by larval stages, while vertebrates are subject to both larval and adult stages. A second important fact is that helminth parasites can have no existence apart from their hosts, their life is indissolubly bound up in and dependent on the latter. It is true that they may survive the death of their host for a longer or shorter period, and may even make their exit from the dead host and be found at some distance from it, but their life is practically at an end, and they can never hope to make any prolonged existence thereafter. On this account it has been found impossible to keep adult helminths alive under artificial conditions for any length of time, although theoretically, if the exact physiological conditions of the habitat could be reproduced, it is not altogether an impossibility. Various larval stages have been reared in artificial media, but never beyond the point at which a living host was necessary for their continued development. In the case of intermediate stages the death of the host does not necessarily imply the death of the parasite, provided the former be eaten by some animal suitable as a final host. In such a case the parasite is enabled to complete its life cycle; otherwise it must inevitably perish. The rare cases of heterogenesis are no exception to this, for even although in such cases a sexual cycle is passed through outside the host, the helminth eventually requires a host, and if that is withheld its life will be cut short. Present knowledge seems to point to the fact that practically no species of animal can be considered immune to infection with helminths of one kind or another. The degree of susceptibility varies to a great extent in relation with the general habits, the mode of feeding, and certain imperfectly known physiological idiosyncrasies. The susceptibility to the various kinds of helminths also varies in a similar way; thus the dog is particularly prone to infection with cestodes, but rarely harbors trematodes. Certain species of helminths are capable of infect-

ing a large number of different hosts, whereas others are confined to one particular host; for example, *Taenia solium* occurs only in man, while *Fasciola hepatica* occurs in a variety of mammals. Again, some hosts harbor numerous species of helminths, even as many as ten or a dozen different species being present at the same time, while others may harbor only one species, although that may occur with great frequency and in excessive numbers. The presence of helminth parasites in vertebrate animals must be regarded not as an abnormality, but as a normal condition, just in the same way as the presence of intestinal bacteria may be considered normal. The belief has more than once been advanced that helminths may even exercise a beneficial influence on their host. To some this idea may appear quite in discord with the medical conception of parasite as something loathsome and highly dangerous. The belief is founded on the fact that most helminths secrete a more or less irritating substance which may have the effect of stimulating digestion. There is, however, no direct evidence of this, but it is now generally agreed that the influence of helminths for the most part is, if not beneficial, at least comparatively innocuous. It is only when some vital organ is invaded, or when infection reaches an excessively high degree that harm results. In the latter case, however, it is difficult to know where to fix the limit. It is evident that the occurrence of helminth parasites in man is only an instance of a general phenomenon in nature. No animal is exempt from the attacks of helminths of some description or other, and the less civilized races of mankind are practically in the same condition. We owe our comparative freedom from helminths to the amenities of civilization, but when these fail this exemption disappears. From the point of view of helminthology, then, civilization may be regarded as consisting of three factors—namely, the cooking of food, the wearing of clothes, and the application of sanitation and personal cleanliness. These are the three chief means of defence against helminths.

2. **Migraine.**—Clarke bases the diagnosis of migraine for the actual attacks upon the following points: 1. The marked hereditary tendency, direct transmission, and absence of other neuroses in the family; 2, the onset of the affection in most of the patients in childhood; 3, the characteristic visual phenomena preceding the headache, especially temporary hemiopia; 4, headache, generally unilateral; 5, the vomiting which generally accompanies the onset of the headache, and after which the condition of the patient begins to improve; 6, return to the normal in the interval between the attacks; and, 7, the temporary loss of speech and sensory disturbance which are well known features of some severe attacks of migraine.

LANCET.

June 25, 1910.

1. Behavior of the Leucocytes in Infection and Immunity, By F. W. Andrewes.
2. Anomalies of the Mind and the Evolution of the Mental Processes, By Robert Jones.
3. The Administration of the Public Health and Education Acts in Relation to the Prevention and Cure of Diseases of the Throat and Nose, By T. Jefferson Faulder.
4. Some Observations on Gastrointestinal Fermentation, By David Sommerville.
5. On the Hypodermic and Intramuscular Inoculation of Bacterial Vaccines as Demonstrated by Experiments with Typhoid Vaccine, By D. Semple.
6. The Utility of the Antilytic Power of Horse Serum, By Frank C. Eve.
7. The Treatment of the Dysphagia of Laryngeal Tuberculosis by Alcohol Injections into the Superior Laryngeal Nerve, By J. Dundas Grant.
8. Double Dermoid Cyst of the Ovaries with Rupture into the Peritoneal Cavity, By Reginald H. Lucy.

1. **Behaviour of Leucocytes in Infection and Immunity.**—Andrewes, in his first Croonian lecture, remarks that it seems clear that the defensive mechanisms of the body in health are not only fully adequate to deal with the bacteria which gain access to the tissues from the intestine and elsewhere, but that much larger numbers of harmless bacteria can be disposed of with equal readiness. Only when the resistance of the body is lowered by what we term the "predisposing causes" of disease, or when the strain of microbe gaining access is one of special virulence, is this normal equilibrium upset. Under ordinary conditions the work of defence ceaselessly goes on without any obvious fuss or disturbance. But when this first line breaks down, and bacteria begin actually to multiply and hold their own in the tissues, leading to infective disease, a new phenomenon appears. A second line of defence is brought into play in which the resources of the body are concentrated upon the area attacked, should this be localized, as is usually at first the case. The work of defence is now by no means inconspicuous and tranquil; the chief clinical symptoms of the disease depend upon it, for it is the process which we term inflammation. The presence of a closed vascular system enables the body to concentrate upon any desired point both the leucocytes and the humoral elements which may be contained in the blood. Acute inflammation is not necessarily of bacterial origin; it is a response to injury, but the commonest bodily injuries are microbical in origin, and there are few bacterial invasions which are not associated with inflammation. We now justly look upon inflammation as a defensive and reparative process—a means of defence brought into play, and usually with success, where a bacterial invasion threatens the body. Its actual weapons are not, perhaps, different from those employed in the daily extermination of casual invaders, but its clinical features depend upon the acute local vascular phenomena which enable these weapons to be concentrated upon the threatened area. Where the invasion is from the first general and the microbes multiply in the blood stream itself, we have a septichæmia in which the phenomena of inflammation are absent or scattered over various areas. This is commonly a fatal condition, but there are few septichæmias which are not secondary to a primitively local infection. Should the second line of defence be absent or fail, the condition of the patient is a grave one. There is another factor in the second line of defence, the rise in bodily temperature which habitually attends acute infections. It is still *sub judice* how far fever is to be regarded as a defensive mechanism of the body, but there is much to be said in favor of such a view. It is clear that true fever, as distinguished from

mere hyperthermia, is in the main associated with bacterial invasion, and there is evidence that a raised bodily temperature is inimical to pathogenic bacteria, attenuating their harmful properties.

5. **Inoculation of Bacterial Vaccines.**—Semple says that the immunizing response following the inoculation of typhoid vaccine in rabbits as measured by the presence of agglutinins and opsonins in the blood is the same whether the vaccine is given subcutaneously or intramuscularly. In both methods of inoculation the agglutination and opsonic changes when plotted on a chart take somewhat similar courses, and in both an increase of agglutinins practically also means an increase of opsonins. The intramuscular method of inoculating bacterial vaccines possesses no advantages whatever over the subcutaneous method, and as the latter gives rise to less pain and inconvenience it is to be preferred.

7. **Dysphagia of Laryngeal Tuberculosis.**—Grant uses in dysphagia of laryngeal tuberculosis a solution consisting of two grains of beta eucaine hydrochloride in an ounce of eighty per cent. alcohol. The method of injection which he practises is the one recommended by Dr. Hoffmann: The patient is placed in a horizontal position and, with the thumb of the left hand, the sound side of the larynx is pressed toward the middle line, so that the affected half projects distinctly; the other fingers of the hand of the physician lie on this. The index finger enters the space between the thyreoid cartilage and the hyoid bone from without until the patient announces that a painful spot has been reached. With a little practice one arrives at it at the first trial, when one has become familiar with the topographical relations. One now places the nail of the index finger on the skin (which has been previously disinfected) in such a way that the point of entrance for the needle lies opposite its middle. The needle is pushed in for about 1½ cm.; this distance is marked off on the needle perpendicular to the surface of the body. According to the thinness of the subcutaneous layer of fat, the perforation has to be more or less deep. The needle is then carefully moved so as to seek a spot at which the patient states that he feels pain in the ear. The syringe filled with 85 per cent. alcohol, warmed to a temperature of 113° F., is screwed on to the handle and the piston is then slowly pressed down. The patient now feels pain in the ear, the passing off of which he indicates by raising his hand. During the operation he has to avoid both swallowing and speaking; if, however, he makes a movement of swallowing we must follow the movement of the syringe with a light touch. The injection is kept up until no further pain occurs in the ear; then the needle is removed and collodion or sticking plaster is placed on the spot of injection without pressure.

MEDIZINISCHE KLINIK.

June 12, 1910.

1. Clinical Studies of Diseases of the Suprarenal Capsules, with Special Reference to the Chromaffin System, By Egmont Muenzer.
2. Surgical Treatment of Childbirth, By W. Latzko.
3. The Extraperitoneal Cæserean Section, By H. Fuchs.
4. Paracolibacillosis, By Albert Schuetze.
5. Volumetric Measurement of the Breath, By H. Gutzmann.
6. Luxation of the Ulnar Nerve, By Grunert.
7. Malignant Syphilis, By Karl Pierkowsky.
8. Treatment of the Papillomatous Proliferations of the Female Genital Organs, By Hermann Abramsohn.
9. Treatment of Tuberculosis by Means of Natural Human Serum, By H. Lichtenstein.
10. Paradoxical Symptoms in the Wassermann Reaction, By Meirowsky.
11. A New Method for the Quantitative Determination of Bromine, By von Myss.

2. **Surgical Treatment of Childbirth.**—Latzko discusses the operative measures to be undertaken in cases of puerperal septic infection, including extirpation of the uterus when the infection is confined to that organ, operations for septic thrombosis, and for peritonitis.

6. **Luxation of the Ulnar Nerve.**—Grunert reports the case of a soldier, twenty-three years old, who was incapacitated by pain about his right elbow joint. Examination revealed a luxation of the ulnar nerve, which the patient was unable to account for at first. Later he stated that he remembered that he had struck the elbow against a wall four years before and that he had had trouble with the elbow ever since.

8. **Papillomatous Proliferations of the Female Genital Organs.**—Abramsohn recommends the use of the galvanic current as efficient in these cases.

10. **Paradoxical Symptoms in the Wassermann Reaction.**—Meirowsky says that Wassermann's reaction is dependent not only on the reaction material contained in the serum, but also on unknown properties of every constituent employed in the examination, the extracts, sheep's blood, complement, and amboceptor, to such a degree that the same serum may react positively on the first examination and negative on the second, or the reverse. Hence, with our present methods quantitative estimations of the reaction material are impossible. For practical purposes sera may be classed in three groups, sera with stabile reaction material, constantly productive of the positive reaction, sera with labile material, paradoxical with varying reaction, and sera with no demonstrable reaction material. The influence of treatment must be shown in the transformation of group 1 into group 2 or 3. As even the best extract gives occasionally a nonspecific inhibition a reaction can then be designated as positive only when a complete inhibition has been obtained with several extracts. A reaction can be designated as negative only when the same serum has reacted negatively in repeated examinations. The positive reaction with a paradoxical serum is our therapeutic and diagnostic guide. A reaction is to be designated as doubtful when it repeatedly shows a half inhibition. Very often a doubtful serum proves positive or negative at the next examination.

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT.

June 7, 1910.

1. The Cancerous Degeneration of the Chronic Ulcer of the Stomach, By Hauser.
2. The Ambulant Cases of Typhoid in Children and the Spreading of Typhoid, By Brueckner.
3. The Paradoxical Movement of the Diaphragm, By Bittorf.
4. Contribution to the Pathology and Treatment of Coxa Vara, By Hohmann.

5. New Indications for Washing Out the Stomach and a Modified Method, By Struebe.
6. Further Contributions to the Causal Treatment in Glycosuria and Diabetes, By Funck.
7. Meat Poisoning Caused by the Bacillus Enteritidis Gaertner, By Brekle.
8. Tuberculosis of the Optic Nerve, By Reye.
9. Therapeutic Experiences with the Behring-Ehrlich Serum in Diphtheria, By Knautii.
10. Cholera Poison, By Emmerich.
11. Studies Concerning the Nature, Early Diagnosis, and Specific Treatment of Typhoid Fever, By Luedke.
12. Heinrich Curschmann, By Krehl.
13. The Organization of Medical Literature, By Boas.

1. **Cancerous Degeneration of the Chronic Ulcer of the Stomach.**—Hauser reports a case in which not only fresh, typical peptic ulcers existed together with an already present cancerous ulcer, but there was also in the neighborhood of the latter a freshly necrotic area.

2. **The Spreading of Typhoid by Ambulant Cases of the Disease in Children.** — Brueckner says that children from eleven to fifteen years of age are most susceptible to typhoid fever, contrary to the usual assumption that the most susceptible period is between twenty and thirty. This preponderance of cases in children is shown particularly in epidemics, and as the attack is often extremely mild, is not recognized clinically, and remains untreated it is of special danger in the spreading of the disease. An ambulant case of children's typhoid is sometimes the starting point of a more or less numerous series of cases and even of epidemics. Hence febrile diseases of uncertain diagnosis in school children demand immediate bacteriological examination by the school physician that ambulant cases of typhoid may be recognized and this danger averted.

3. **The Paradoxical Movement of the Diaphragm.** — Bittorf asserts that the paradoxical movement of the diaphragm in pneumothorax is the direct consequence of the respiratory intrathoracic fluctuations of pressure.

5. **New Indications for Washing Out the Stomach.** — Struebe states that by washing out the stomach in diabetes he is able to distinguish between an essential and a secondary diabetes. The secondary diabetes is, he says, a habitual glycosuria induced by the constant harmful action of the pancreas upon neighboring diseased organs. He has met with it in gastrointestinal catarrh, constipation, duodenal ulcer, diseases of the gallbladder, and pneumonia of the left lower lobe, and in these cases the washing out of the stomach effects a disappearance of the sugar from the urine. He ascribes this effect to a stimulation of the circulation of the blood and of the fluid currents in the pancreas and to a promotion of the evacuation of the pancreatic juice. He reports a number of cases in detail.

6. **Causal Treatment of Glycosuria and Diabetes.**—Funck urges that the diabetic treatment of glycosuria and diabetes should not be schematic, but should be chosen and carried out after consideration of, and in accordance with the indications of the pathological connection of the symptoms.

8. **Tuberculosis of the Optic Nerve.**—Reye says that tuberculosis of the optic nerve may come from a tuberculous caries of the skull which, after destruction of the dura, breaks directly into the nerve trunk, or from a tuberculous meningitis, extending along the pial vessel sheaths into the nerve substance, or by metastasis from a meningitis. He reports a case in which he was unable to distinguish between the last two causes.

PRACTITIONER.

June, 1910.

1. Some Points Relating to Tuberculous Glands, Mainly with Reference to Treatment, By Sir William Bennett.
2. Distinctive Diagnosis in Dyspepsia, By Robert Hutchison.
3. Jejunostomy for Advanced Cancer of the Whole of the Stomach, By Walter G. Spencer.
4. Five Difficult Cases of Fracture Requiring Operative Treatment, By W. I. de C. Wheeler.
5. The Management of the Vascular Factor in Kidney Disease, By Alexander Morison.
6. The Diagnosis and Treatment of Hæmorrhage from an Unenlarged Uterus, By Victor Bonney.
7. Chronic Appendicitis, By F. J. Steward.
8. Before and after Gastroenterostomy, By J. Mackie Whyte.
9. Review of Recent Work on the Diseases of Children, By Hugh Thursfield.
10. Treatment of Acute Intestinal Obstruction, By Edmund C. Bevers.
11. The Bacterial Disturbances of Digestion and the Consequences thereof, By William Tibbles.
12. Some Skin Diseases from the Point of View of General Practice, By L. Erasmus Ellis.
13. Hernia of the Bladder, By W. Paynter Noall.
14. The Action of Alcohol upon the Human System, By Harold A. Haig.
15. Vicious Circles Associated with Disorders of the Respiratory Organs, By Jamieson Hurry.
16. The Significance of Albuminuria in Diagnosis, By Hugh Barber.

11. **Bacterial Disturbance of Digestion.**—Tibbles says that in bacterial disturbances of digestion the first thing should be to see that the food is as free as possible from injurious bacterial organisms. The second is to see that the food is of such a character as will not favor bacterial action. Thirdly, moderation in diet, especially of animal foods, is essential. It is not necessary to exclude animal food altogether. Although it is said that animal proteins are more prone to bacterial decomposition than vegetable proteins, it should be remembered that they are both composed of amino acids, frequently the same kinds, although the proportions are different. In fact, the animal proteins of our food were formed out of vegetable proteins. Furthermore, it has never been shown that animal proteins behave in the body differently from vegetable proteins, in spite of the arguments of the vegetarians. Putrefaction in the intestines is directly proportional to the amount of proteins in the food. It is true that Zuntz has demonstrated that more indol is produced from meat than from vegetables. But this is probably due to the fact that vegetable proteins are not so accessible either to the alimentary or bacterial enzymes, and therefore are not so readily decomposed. There is also a difference in the effect of carbohydrate foods, bread, sugar, potatoes, and legumes give rise to most organic acids and gases; on the other hand, rice, sago, tapioca, and arrowroot give rise to comparatively little fermentation. It is therefore advisable that such people should begin their course of treatment with a dietary consisting of roasted or grilled meat, plenty of cooked vegetables, a little milk, rice, sago, tapioca, arrowroot, and a little good red wine.

such as burgundy. They should be forbidden to use cheese, most kinds of fish, game, pork, veal, hashed meat, stews, rich gravy soups, meat extracts, pastry cakes, tea, and coffee. As regards medicinal treatment, the bowels should be completely and regularly evacuated. It is a useful practice to combine with the aperient a hepatic stimulant, such as podophyllin, rhubarb, calomel, sodium sulphate, or phosphate. Washing out the stomach may be necessary if there is gastric dilatation. Intestinal antiseptics, such as guaiacol, the salicylates, and naphthol, are very useful. Probably one of the best means of treating the intestinal fermentation is by the administration of sour milk, especially that soured by the Bulgarian bacillus. Tablets have proved unreliable and sometimes inert. The best means of preparing sour milk is by liquid cultures of the bacilli. A rectal injection of whey to which a culture of the Bulgarian bacilli has been added is also of value in some cases.

14. **Action of Alcohol upon the Human System.**—Haig finds that in health alcohol in moderation may be useful, but that its continuous use is to be avoided, and we must bear in mind the fact that a certain idiosyncrasy may exist; in diseased conditions, we see that alcohol is in many cases of great value as a therapeutic agent of a temporary nature, always provided that we use it with discretion and watch its effects; and that taken in excess, or in smaller quantities over long periods of time, alcohol is extremely deleterious to the human system, so much so in fact that in many instances it has induced physicians to discontinue its use as a drug on the grounds that its disadvantages outweigh its advantages.

Proceedings of Societies.

AMERICAN SURGICAL ASSOCIATION.

Annual Meeting, held in Washington on May 3, 4, and 5, 1910.

The President, Dr. Rudolph Matas, of New Orleans, in the Chair.

(*Concluded from page 96.*)

The Simulation of Neoplasms by Inflammatory Processes.—Dr. C. A. Hamann, of Cleveland, spoke in this paper of the resemblance, clinically, between certain inflammatory processes and tumors, leading to errors in diagnosis. Chronic osteomyelitis and other forms of bone diseases resulting in enlargement of bones; and formative osteitis, as the result of various irritants, leading to the production of swellings which simulate neoplasms, were mentioned.

Dr. Harry M. Sherman, of San Francisco, reported an instance in which from a mistaken diagnosis he had removed an inflammatory mass believing it to be a sarcoma including the parotid gland. A radical operation was done, beginning with the clavicle, with removal of all the tissues up to and including the parotid gland, following the report on a section of the growth sent to the pathologist that it was probably of sarcomatous origin. When the whole mass was sent to the laboratory for examination, however, it was proved to be an inflammatory mass in the centre of which was a normal parotid gland. In the light, however, of no clinical symptoms of syphilis, absence of the Wassermann reaction, and a definite tumor mass, the evidence against syphilis in the diagnosis was enough to justify the operation for sarcoma.

A Review of One Hundred and Twenty Resections of the Rectum for Cancer was presented by Dr. William J. Mayo, of Rochester, Minn. The paper was of a statistical character.

Dr. Arthur Dean Bevan, of Chicago, emphasized a point of technique after an experience with some twenty cases in which the Kraske operation was performed. During the Kraske operation he did not employ a single ligature, but simply, as he came to the tissues on the sides of the incision freeing the rectum, massive clamps were put on the tissues, for instance, high up on the levator ani muscles and on the inferior hæmorrhoidal vessels which supplied the rectum and the lower part of the sigmoid. With the employment of these clamps there was less risk of hæmorrhage and a greater saving of time than if an attempt was made at ligation.

Dr. Joseph C. Bloodgood, of Baltimore, said that one of his first cases was such that he was able to save three inches of the anus and rectum, making a suture of the sigmoid which was brought down, and this patient has not only been as well as before, but had perfect function.

Dr. Alexander H. Ferguson, of Chicago, said that in some of these cases he had resorted to the combined operation in two stages to advantage. He opened the abdomen, took the proximal end of the bowel, made an artificial anus, and inverted the distal end into the rectum; that would be one operation. Then, when the patient was in good condition, he removed the rectum from below, the bowel being already inverted so as to give ready access to the mass. By the use of clamps without ligatures the operation could be done in a few minutes.

Dr. Joseph A. Blake, of New York, had had more experience with the combined operation than with any other; he had done twelve consecutive operations in that way without any mortality. The mortality was less if a permanent colostomy was done; it avoided infection, and the operative field was kept comparatively clean; it also afforded the opportunity of removing the whole growth at the lower part of the bowel. This procedure should be confined to those cases at the middle of the rectum or above, and those in which the anal sphincter was involved and had to be removed.

Dr. G. E. Armstrong, of Montreal, said that in the low cases where the sphincter had been involved he had sometimes succeeded in getting a satisfactory sphincter by bringing the upper ends down through the lower fibres of the glutæus maximus. One such patient operated upon ten years ago now had perfect control.

Dr. Mayo said there had been some very satisfactory cases of union between the sigmoid and lower portion of the rectum, and the rule had been that when made from above it had been all right, but when made through the posterior incision, or through the vagina, there were ulcer and fistula. In regard to permanent colostomy, he had often re-

gretted not employing this procedure, because some deaths had been due to infection. He emphasized the point that it was practically impossible to make honest percentages of cases such as these, for the reason that, if all patients who could not be traced were counted as dead, the mortality rate would mount up. This was the only way, however, to consider cases of which we had no absolute record, and proved the inaccuracy of any percentages which one might try to strike.

Choriocarcinoma; Report of a Case Occurring in a Patient with an Infantile Uterus.—Dr. A. PRIMROSE, of Toronto, Canada, said in this paper that tumors variously described in individual instances as chorioepithelioma, deciduoma malignum, syncytioma malignum, etc., had hitherto been considered as overgrowths of chorionic villi which invaded the blood sinuses of the uterine wall and then, rapidly disseminating, presented the clinical picture of great malignancy. A neoplastic growth of this character might occur after normal pregnancy. In addition, however, it might follow miscarriage or it might make its appearance after the removal of a vesicular mole. In cases of ectopic gestation the tumor elements had been demonstrated in the gestation sac. In 1903 Teacher published the results of an exhaustive study of chorioepitheliomata, and his views had generally been accepted, that they arose in connection with pregnancy and originated from the chorionic epithelium, which was of fœtal epiblastic origin. The tumor, removed, presented the characteristic elements of a choriocarcinoma with a very large proportion of Langerhans cells showing metaplasia and mitosis. A few isolated masses of the syncytium were also present. These tumors might exhibit a histological structure in which fully formed villi were present or the cellular elements of that structure in varying proportion. Secondary growths were common in the vagina or in the lungs, but occasionally metastases occurred in the liver, kidney, and other organs. There was a relationship between pathological processes resulting in a neoplasm and physiological activity, because the invasion of the maternal uterine tissues by the villi occurred as a normal process in pregnancy. Increased activity in this direction might lead to malignant infiltration and tumor formation. A further fact of interest was that in normal pregnancy normal chorionic elements were carried to the lungs and lodged in the pulmonary capillaries, and there underwent absorption.

The clinical course of chorioma presented great variation. The primary growth might disappear spontaneously, and this might occur while secondary metastases continued and produced a fatal issue. Hæmorrhage, pain, anæmia, and extreme emaciation were frequent symptoms, and where metastases occurred in the lungs there were cough and hæmoptysis. Ewing's classification was the most valuable guide for prognosis and treatment. It included chorioadenoma, in which the structure of the villus with its normal histological arrangement is reproduced; choriocarcinoma, in which Langerhans cells were chiefly in evidence and where marked mitosis was observed; syncytial endometritis, where the maternal tissues were invaded with wandering cells derived from the syncytium; and syncytioma, where transitional types were in evidence. Of these, the choriocarcinoma was extremely malignant and was probably invariably fatal. The other forms presented great variation in their degree of malignancy and might even disappear spontaneously or after partial removal. Where spontaneous disappearance did occur, Teacher had shown that the process was brought about by fibrosis and encapsulation.

The Prognosis and Operative Treatment of Fracture of the Base of the Skull.—Dr. JOSEPH RANSOHOFF, of Cincinnati, presented a paper based on an analysis of 190 cases occurring during the last ten years in the Cincinnati Hospital. One hundred and twenty-four of the cases were fatal. The prognosis was influenced by the depth of the coma chiefly, and even in greater degree by the fixed condition of the pupils. Of forty-two patients with nonreacting pupils, forty-one died. In five years there were nineteen operations, trephining or decompressive, with seven recoveries. The conclusions of the paper were as follows:

1. There would always be a large mortality connected with basal fractures; death resulting from primary shock, brain laceration, or hæmorrhage. In thirty-seven per cent. of the fatal cases the patients died within six hours or less, and fifty-six per cent. died within twelve hours. It was not probable that the mortality of this class of cases could ever be reduced with or without operation. They were primarily fatal.

2. In twenty-three per cent. of the fatal cases the patients died during the second twelve hours of the first day; and six per cent. died during the second day. They were the cases in which the coma was not profound, in which the pupils were not fixed, in which the breathing was not stertorous, and in which there was not complete muscular relaxation. With a slow, full pulse and lumbar puncture indicating hæmorrhage and increase of intracranial pressure, a trephining operation was indicated. In the doubtful cases an operation was indicated.

3. In this class of cases, where facilities for the major operation of trephining were not at hand, repeated lumbar puncture should be essayed. This procedure might be destined to take the place of decompressive operations.

4. There was a large group of cases in which there was complete consciousness or in which there was a somnolence or milder degree of coma, and in which the concomitant symptoms did not indicate a grave intracranial trauma either to the brain or to its vessels. The pupils, though uneven, reacted; involvement of one or more cranial nerves might be evident. The symptoms, singly or collectively, were not ominous at any time. Eighty per cent. of this class of cases had a tendency to recovery with or without operation. The patients should not be operated on unless the symptoms indicated an increase of intracranial pressure from hæmorrhage, beginning cerebral œdema, or distinct localizing (cortical) symptoms.

5. There was a distinct class of cases in which an operation is indicated. They were cases which, seemingly not severe in the beginning, grew progressively or suddenly worse, showing signs of in-

creased intracranial pressure. Decompressive operations might save a considerable proportion of the patients.

6. It had yet to be determined where the trephining should be done to obtain the best results. Since most fractures involved the anterior or the middle fossa, subtemporal trephining was doubtless the procedure oftenest indicated. When, however, a hæmatoma in the mastoid or occipital region indicated an involvement of the posterior fossa, the operation should be subtentorial. To try to relieve the subtentorial tension by an opening made in the temporal region was illogical and might be dangerous. He had attempted it recently in a case of cerebellar tumor the site of which could not be determined. The patient succumbed within two weeks with symptoms of bulbar paralysis.

Dr. Frank E. Bunts, of Cleveland, said that in an ordinary case of fracture of the base of the skull, in which the blood pressure could be ascertained with a beginning choked disc and œdema, and hæmorrhage in the brain detected, the decompression operation should be performed, and in many such cases we might expect altogether beneficial results.

Dr. Joseph C. Bloodgood, of Baltimore, said that up to the present time he had been unable to find any case of epilepsy following an injury to the skull in which some piece of the skull was removed, either by operation or by the injury itself. This would rather substantiate the view that epilepsy was more apt to be started by changes in pressure than by actual injury.

Dr. G. E. Armstrong, of Montreal, said that if in these cases the pressure was subtentorial, as indicated by the respiration, aspiration of the cerebrospinal canal might prove very injurious. Regarding Dr. Bloodgood's remarks, he would like to report two instances where epilepsy had followed in the presence of considerable defect in the skull; one following the kick of a horse in a young man, where there was rupture of membrane, loss of brain tissue with considerable defect in the skull remaining, and epilepsy beginning a couple of years later; the other, in a man injured in the frontal region, in which there was a considerable defect in the skull, and epilepsy had followed.

A Method of Overcoming the Shortening in Old Fractures Treated by the Open Method.—Dr. Edward Martin, of Philadelphia, said in this paper that it was because of the complete futility of any method of traction which could be applied to the leg and foot in the case of an ununited fracture of the femur with 2½ inches of shortening that the present method of overcoming the shortening had been devised. It consisted in a long strong canvas strip pocketed in the middle and looped at the ends. The bones at the seat of fracture were freed, the pocket was slipped over the proximal end of the distal fragment, the ends of the canvas strip were carried in the long axis of the limb, and in the loops was fixed a cord to which were attached the weights. By thumb pressure the bone was kept from protruding from the wound, and weights up to 100 pounds, or even more, are attached to the rope. In from three to five minutes the shortening was overcome. Only those structures which interfered with proper placement were stretched, and this was done so thoroughly that there was but slight tendency to the reproduction of deformity.

Dr. Richard H. Harte, of Philadelphia, said, in regard to extension, that he considered a pulley similar to that used on boats, a double and single pulley, to be the best type to use. These should not be close together, but there should be enough line between them to allow of manipulation of the limb by the operator. After a thorough incision had been made and the ends of the bone exposed, one could disengage the bands of tissue by the employment of steel elevators. It was important to do as little damage as possible to the tissues. He did not consider silver plates strong enough to hold the bones in position, and therefore would always advise the use of a heavy steel plate such as that suggested by Lane.

Dr. Albert J. Ochsner, of Chicago, described a method consisting in the slow stretching of the muscles, instead of the rapid stretching, and the only thing that was peculiar about the method was the application of rubber adhesive strips to as high a point above the seat of fracture as possible. For instance, instead of applying the rubber adhesive up to the fracture, it should be applied over the entire length of the thigh, then, with no more than 24 pounds of weight, in every fracture where there had not been union, he had been able to stretch the muscles sufficiently to replace the fragments without resection of the ends. In cases where there was a union in malposition, the muscles would stretch to a marked extent. It was important to use two Lane plates, with two screws at each end, in order to keep the bones from slipping.

Dr. James E. Thompson, of Galveston, thought the important point was that it was not the contraction of the muscles which prevented reduction; it was hæmorrhage, and after this blood clot had been evacuated the bones could be held in proper position.

Dr. Harry M. Sherman, of San Francisco, said that the method of extension described by Dr. Harte he did not consider so good as that in which two hanks of yarn were applied as perineal straps, the weight coming on the tuberosity of the ischium. On the foot was put another hank of yarn. The pulling upon the bones had been measured, and over 200 pounds of weight had been applied in some cases without injury to the ligaments of the ankle or knee, and that was sufficient to pull out any tissue interfering with the approximation of the bones.

Dr. Martin said that the length of the screws used in adjusting these plates should be the thickness of the bone. They should be threaded up to their heads, and to hold the plate in place it was required that they penetrate entirely through the bone and no more. In cases of extension he preferred to use the old fashioned resin plaster, properly made, because the rubber plaster always excoriated the skin.

Fracture Dislocations of the Os Innominatum.—Dr. Harry M. Sherman, of San Francisco, made the point in this paper that simple uncomplicated fracture of a pelvic bone was not of necessity a serious lesion, but that healing could be expected in an ordinary way as after a fracture of a bone of

an extremity: the really serious lesion was the complication of injuries to the bladder, the intestines, or the vascular system. Injuries to the bladder were more likely to occur when the fracture had been due to an anteroposterior compressive force; injuries to the urethra were more apt to occur when the fracture was due to a transverse compressive force. The present indications were to open at once the space of Retzius and make a reverse catheterism and perineal section, with lateral incisions in the groin and perinæum for drainage of all areolar planes. With this technique the mortality should be reduced from sixty to about thirty-three per cent.

Dr. ARPAD G. GERSTER, of New York, had had a case of fracture of the female pelvis on the left side in which there was no injury of the urethra, although it was compressed to such an extent by a solid blood clot that retention followed and had to be relieved for fifteen or sixteen days by the use of the catheter. The woman recovered. There was no other injury present. Another case was one in which there was fatal hæmorrhage following fracture of the pelvis. The post mortem examination revealed extensive laceration of one of the common iliac arteries and subperitoneal hæmorrhage.

Momburg's Method of Artificial Anæmia by Suprapelvic Constriction.—Dr. ARPAD G. GERSTER, of New York, in reporting a successful case of his own, presented the history and present status of the method of obtaining artificial anæmia of the pelvis, its organs, and the lower extremities by elastic constriction of the abdominal aorta. The procedure had been employed hitherto in Germany in more than 300 cases by a large number of surgeons, gynæcologists, and obstetricians, whose reports were in the main very favorable. The method consisted in the application of the Esmarch principle to the waist and to the abdominal aorta, which thus, by the superposition of from two to six turns of the elastic cord, was compressed against the lumbar spine. The apprehension that the necessary amount of constriction might damage the gut had not been justified by experience. The interruption of the aortic blood current was regularly followed by a marked rise of the blood pressure, and its restoration by a still more marked cardiac depression, which, in patients afflicted with arteriosclerosis, myocarditis, or even well compensated valvular lesions, might attain alarming proportions. Hence Momburg's method is not suitable in these cases. In healthy and young individuals, however, its use was free from danger. By this procedure the surgery of injuries, tumors, and acute or chronic suppurative disorders of the pelvic skeleton and contents had been rendered infinitely more safe than ever before. Gynæcology also had readily appropriated the new procedure. Mackenroth had shown that the most radical forms of attacking carcinomata of the uterus had become safe and bloodless by its aid. Isolation of the ureters and removal of the retroperitoneal lymphatics along with the diseased womb were thus done with the bloodless precision of a post mortem dissection. The method's greatest utility for life saving, however, had been demonstrated in post partum hæmorrhage, where Momburg's constriction afforded the advantage of an easy and prompt control of the loss of blood, a measure which on account of its simplicity is available to every practitioner, to the midwife, and even to intelligent laymen. An additional advantage of the measure was that not only was the bleeding arrested by it, but an energetic and lasting contraction of the flaccid womb followed the artificial anæmia.

Dr. JOSEPH RANSOHOFF, of Cincinnati, had seen this method pursued in one case, and in this no ill effects resulted from its employment.

Dr. HARRY M. SHERMAN, of San Francisco, would suggest that where this method was used there was the same vasomotor paralysis below the point of constriction as after the employment of the ordinary Esmarch bandage on the extremities, and that this might be a reason for returning the vessels to the circulation gradually.

Dr. RUDOLPH MATAS, of New Orleans, had pursued some experiments among students with this method, but found that a fair test of it could not be made unless the patient was anæsthetized in order to gain complete relaxation. From these very imperfect experiments, however, it was shown that in all weak hearts there was apt to be prompt failure; instead of the usual increase in blood pressure, there would be a fall, and this indicated an inability on the part of the heart to keep up. He would not advise the use of the Momburg constrictor on patients suspected of having any cardiac irregularity, but believed it would prove of great benefit in producing artificial anæmia in strong, robust individuals, without being followed by any ill effects.

Dr. GERSTER would especially emphasize the point that this constrictor was not indicated in cases in which there was any disturbance of the cardiac function. It has proved particularly valuable in post partum hæmorrhage in healthy individuals.

Book Notices.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Leitfaden der experimentellen Psychopathologie. Vorlesungen gehalten an der Universität Leipzig. Von Privatdozent Dr. ADALBERT GREGOR, Oberarzt der psychiatrisch-neurologischen Klinik, Leipzig. Berlin: S. Karger, 1910. Pp. x-222.

Although the title of this work is experimental psychopathology, in reality it is a handbook of practical experimental methods which may be used to great advantage in every day psychiatry. No department of medicine in the United States has been so backward in developing rational methods of investigation as psychiatry. There is no excuse for this retardation, for European psychiatry stands well in the lead of all its sister branches. The isolated character of our institutions, their enormous size, the boarding house-almshouse features, and many others have been in part responsible for this dearth of scientific interest, but happily such conditions are passing, and in many of our public and private institutions excellent clinical psychiatry is being done.

This work of Gregor's will appeal to the active

worker in the problems of psychopathology, especially in its relation to clinical psychiatry. There are sixteen lectures. The first takes up general topics relative to the introduction of psychological methods in psychiatry, and gives an excellent résumé of the development of mental tests in their practical bearing. Then follow a chapter on the Time Sense and one on Reaction Times and Methods of Testing. The problems of Grasp are then discussed, followed by two lectures on Association Reactions. Both of these are excellent. Lectures 7 and 8 deal with methods for testing Memory and Pathology of Memory, while the two following chapters take up the interesting topics of the Psychology of Evidence and Evidence Studies in the Psychoses. The eleventh and twelfth chapters deal with the Psychology and Pathology of Attention and methods of studying Attention Disorders. An excellent chapter on objective registration of willed actions then follows. The difficult field of the Emotions and Affect Reactions is treated in the thirteenth lecture, while the general conditions of mental work receive attention in another. The final chapter deals with general methods of the Investigation of Intelligence.

A full bibliography completes this valuable monograph, one of the best since the appearance of Sommer's valuable introduction to this broad field. To the worker in psychiatry not skilled in objective methods of study of mental phenomena it is indispensable.

Das Trachom in Ostpreussen. Kurzgefasste Darstellung seiner Pathologie und Therapie. Von Dr. Küsel, Stabsarzt, Gumbinnen, ehemaligem Oberarzt der königlischen Universitätsaugenklinik zu Königsberg i Pr. Halle a.S.: Carl Marhold, 1910. Pp. 80.

Küsel's study of trachoma in East Prussia appears as one of the *Abhandlungen* in the publications on ophthalmology edited by Vossius. It will be of interest to those of us who have to deal with immigrants from the neighboring districts of Posen, Galicia, and Russian Poland. The author discusses the history and geography of trachoma, the measures taken to prevent its spread in Prussia, and the governmental regulations in the campaign. Succeeding chapters deal with the ætiology, pathological anatomy, diagnosis, symptomatology, clinical course, complications, and prognosis of granular ophthalmia. It will be seen that the subject of treatment, medicinal and operative, and of prophylaxis has been left for a second part of this publication.

Physiology and Pathology of the Semicircular Canals. Being an Excerpt of the Clinical Studies of Dr. Robert Barany, with Notes and Addenda Gathered from the Vienna Clinics. By Adolph E. Ibershoff, M. D., and a Foreword by Royal S. Copeland, A. M., M. D., New York: Paul B. Hoeber, 1910. Pp. 64.

Ibershoff has aimed to simplify and offer in a more easily assimilable form the wealth of data and the rather involved conclusions presented by Barany. The text has been elaborated and amplified by notes and addenda gathered at the clinics and lectures of Ruttin, Neumann, and Alexander. The intricate subject is rendered somewhat more lucid by the use of numerous diagrams after Mackenzie, Hensen, Alexander, Barany, and others, and by this means the histology, anatomy, and physiology of the nonacoustic labyrinth and of the associated oculomotor apparatus are rendered fairly intelligible. The great desideratum is still, however, a clear and simple presentation of the physiology of balance and its disturbances, and of the relation of the vestibule and oculomotor apparatus to this function in health. Without this we are merely confused by a multitude of facts of no apparent relevancy. This little summary is a good rough presentation, somewhat marred by lack of style and too literal translation.

Diseases of the Eye. A Handbook of Ophthalmic Practice. For Students and Practitioners. By G. E. de Schweinitz, A. M., M. D., Professor of Ophthalmology in the University of Pennsylvania, Ophthalmic Surgeon to the University Hospital, etc. With 351 Illustrations and Seven Chromolithographic Plates. Sixth Edition, Thoroughly Revised. Philadelphia and London: W. B. Saunders Company, 1910. Pp. 945. (Price, $5.)

The sixth edition of de Schweinitz's excellent textbook reflects recent advances in ocular pathology and therapeutics which have led to the revision of many of the chapters on internal ocular affections, especially cataract, sympathetic ophthalmia, glaucoma, optic neuritis, and papillœdema; on operations, notably the orbital operations and those for ptosis; and on several special topics, such as nystagmus and pulsating exophthalmus. Special paragraphs appear for the first time on a variety of practically and scientifically important topics, among which we may cite, Extraction of Cataract in the Capsule, Precorneal Iridotomy, Restoration of Contracted Socket, Atoxyl Amaurosis, Ocular Complications of Nasal Accessory Sinus Disease, and Obstetric Injuries of the Cornea. The work will no doubt continue to be a standard, not only for the student but for the practitioner as well.

MEDICOLITERARY NOTES.

The report on the offspring of drunken parents recently made in Edinburgh and Manchester by an impartial committee will shock prohibitionists and astonish many a physician. Not only were the children of some 3,000 families examined equal in every way to those of sober parents, but they surpassed them in acuity of vision. This superiority is probably educational only and is due to the constant watching for papa to come around the corner, followed by swift incursions to the interior to report on the probable degree of stimulation and excitement achieved by the subject of this earnest if not affectionate espionage.

* * *

We are disposed to look with much suspicion upon statistics showing supposed racial degeneration in cities. Individuals taken from slum environment and properly housed and fed rapidly pick up physically. The deficiencies due to the lack of early mental training are not so quickly remedied, but we should like to see the effect of removing large blocks of these alleged degenerates to clean and airy surroundings, where they could be well fed and scientifically trained, each according to individual proclivities shown. We are inclined to think that in five years it would be practically impossible to distinguish the subjects of this experiment from their neighbors who had had the better start.

Mr. Abraham Flexner continues his more or less valuable studies of physicians and medical schools in the July *Atlantic* in an essay on The Plethora of Doctors. We are certainly numerous in this country, one to every 568 of population. We believe that this calculation is based, however, upon lists that include many nonpractising graduates. Laboratory workers, medical journalists, members of boards of health, and several other classes should be excluded.

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On noting The Patient to the Doctors in the index of the July *Century*, we hoped to find an informing, perhaps a humorous essay. It turns out to be a rather peevish poem by Witter Bynner, requesting the faculty not to diagnosticate his case wrongly, his sufferings being really due to nostalgia.

* * *

The July *Atlantic* has an admirable article on the Medical Exploitation of Animals, by Frederick L. Wachenheim. Fortunately all the magazines of the highest class have been well informed concerning the crusade against indispensable experimental physiology and have striven earnestly to place the facts before their readers. It is providential that certain sensational newspapers of large circulation are read for their news columns only, their opinions being a subject of derision.

NEW PUBLICATIONS.

Fischer, Louis.—Diseases of Infancy and Childhood. Their Dietetic, Hygienic, and Medical Treatment. A Textbook designed for Practitioners and Students in Medicine. Third Edition. With Three Hundred and Three Illustrations, Several in Colors, and Twenty-nine Full Page Half Tone and Color Plates. Philadelphia: F. A. Davis Company, 1910. Pp. xxiii-980.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of and deaths from cholera, smallpox, yellow fever, and plague have been reported to the surgeon general of the United States Public Health and Marine Hospital Service for the week ending July 8, 1910:

Place.	Date.	Cases.	Deaths.
Cholera—Foreign.			
China—Swatow	May 10-23		250
Germany—Berlin	June 23-27		2
India—Calcutta	May 8-14		74
India—Madras	May 21-27		1
India—Moulmine	May 1-7	1	1
India—Negapatam	Apr. 16-29		31
India—Rangoon	May 15-21		2
Java—Batavia	May 15-21	3	2
Java—Samarang	May 15-21	42	32
Java—Soerabaya	May 15-21	12	5
Russia—General	May to June 16	1,491	573
Straits Settlements—Singapore	May 8-14	7	5
Yellow Fever—Foreign.			
Costa Rica—San José	May 28-June 29	2	
Ecuador—Guayaquil	June 1-15	9	8
Sierra Leone—Sherboro	May 20		Present
Plague—Foreign.			
Chile—Iquique	May 22-June 4	10	3
China—Amoy	May 8-31	10 to 15 daily	
China—Chao Yang District	May 5-19		3,000
China—Hankow	May 15-28	2	1
India—Calcutta	May 8-14		87
India—Kurrachee	May 22-28	58	53
India—Rangoon	May 15-21		33
Japan—Formosa	May 8-28	5	4
New Zealand—Auckland	May 23	1	
Peru—Arequipa Department—			
Mollendo	May 16		Present
Peru—Callao Department—			
Callao	May 12	1	
Straits Settlements—Singapore	May 8-14	1	1
Turkey in Asia—Lobeia	May 1-24	25	27
Smallpox—United States.			
Alabama—Montgomery	June 19-25	2	
Arkansas—Fort Smith	June 19-25	1	
Florida—Duval County	June 19-25	2	
Florida—Jackson County	June 19-25	2	
Florida—Walton County	June 12-18	1	
Missouri—Kansas City	May 15-31	13	
Missouri—St. Louis	June 19-25	4	
Nebraska—Lincoln	Mar. 1-31	3	
Nebraska—Lincoln	Apr. 1-30	10	
Nebraska—Lincoln	May 1-31	13	
North Dakota—Billings County	Apr. 1-30	1	
North Dakota—Bottineau County	Apr. 1-30	3	
North Dakota—Cavalier County	Apr. 1-30	6	
North Dakota—Walsh County	Apr. 1-30	10	
North Dakota—Ward County	Apr. 1-30	1	
Pennsylvania—Entire State	Apr. 1-30		2
Pennsylvania—Entire State	May 1-31	22	
Tennessee—Hamilton County—Chattanooga	June 19-25	1	
Tennessee—Knox County—Knoxville	June 21-27	1	
Tennessee—Shelby County—Memphis	June 19-25	2	
Utah—Boxelder County	May 1-31	1	
Utah—Cache County	May 1-31	6	
Utah—Davis County	May 1-31	17	
Utah—Salt Lake County	May 1-31	21	
Utah—Utah County	May 1-31	1	
Utah—Weber County	May 1-31	18	
Smallpox—Foreign.			
Canada—Fernie	June 15-25	3	
Canada—Halifax	June 19-25	4	
Canada—Pictou	June 19-25	5	
Chile—Valparaiso	May 19	4	
China—Shanghai	May 22-June 5	2	13
France—Paris	June 5-11	3	
Germany—General	June 12-18	1	
Germany—Hamburg	June 5-11	1	
India—Kurrachee	May 22-28	2	3
India—Rangoon	May 15-21		7
Italy—General	June 6-12	10	
Italy—Naples	June 6-12	10	5
Japan—Formosa	May 22-28	1	1
Mexico—Aguascalientes	June 12-18		4
Mexico—Guadalajara	June 11-17		4
Mexico—Mexico	May 22-28		1
Mexico—San Luis Potosi	June 5-11	3	2
Portugal—Lisbon	June 5-11	33	
Russia—Libau	May 6-[illegible]	25	3
Russia—Moscow	May 29-June 4	13	3
Russia—Odessa	June 5-11	8	2
Russia—Warsaw	Mar. 6-26		52
Spain—Madrid	May 1-31		3
Spain—Seville	May 1-31		2
Straits Settlements—Singapore	May 8-14	6	5

Public Health and Marine Hospital Service:

Official list of changes of stations and duties of commissioned and other officers of the United States Public Health and Marine Hospital Service for the seven days ending July 9, 1910:

ANDERSON, JOHN F., Passed Assistant Surgeon. Granted five days' leave of absence from July 6, 1910; paragraph 189, Service Regulations.

ALTREE, G. H., Acting Assistant Surgeon. Granted thirty days' extension of leave of absence from May 3, 1910, on account of sickness.

DUFFY, FRANCIS, Acting Assistant Surgeon. Granted four days' leave of absence from July 6, 1910.

GRUBBS, S. E., Passed Assistant Surgeon. Granted four days' leave of absence en route to station.

HOUGHTON, M. W., Acting Assistant Surgeon. Granted two days' leave of absence from July 2, 1910.

IRWIN, CHARLES H., Pharmacist. Relieved from duty at Chicago, Ill., and directed to proceed to Angel Island Quarantine, California, and report to the medical officer in command for duty and assignment to quarters.

KERR, J. W., Assistant Surgeon General. Granted one month's leave of absence from July 7, 1910.

LEAKS, J. P., Assistant Surgeon. Granted seven days' leave of absence from June 24, 1910; paragraph 191, Service Regulations.

LONG, J. D., Assistant Surgeon General. Directed to proceed to Columbus, Ga., upon special temporary duty.

LUMSDEN, L. L., Passed Assistant Surgeon. Directed to proceed to Norfolk, Va., upon special temporary duty.

MCINTOSH, W. P., Surgeon. Granted four days' leave of absence from July 5, 1910.

Macdowell, W. F., Pharmacist. Granted one day's leave of absence from June 9, 1910; paragraph 210, Service Regulations.

Morgan, Roy, Acting Assistant Surgeon. Granted seven days' leave of absence in June, 1910; paragraph 210, Service Regulations.

Nydegger, J. A., Surgeon. Granted seven days' leave of absence from July 3, 1910.

Stewart, W. J. S., Acting Assistant Surgeon. Granted one month's leave of absence, without pay, from June 23, 1910.

Story, Henry C., Acting Assistant Surgeon. Granted thirty days' leave of absence from July 1, 1910.

Walker, T. D., Acting Assistant Surgeon. Granted eleven days' leave of absence from June 28, 1910.

Wetmore, W. O., Acting Assistant Surgeon. Granted five days' leave of absence from June 8, 1910, and one day's leave, June 15, 1910, under paragraph 210, Service Regulations.

Casualty.

Mason, M. R., Pharmacist. Died June 29, 1910.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending July 9, 1910:

Adams, Paul A., Lieutenant, Medical Reserve Corps. Died at Scofield Barracks, H. Ty., July 3, 1910.

Baker, David, Major, Medical Corps. Report arrival at Chickamauga Park, Ga.

Barby, Taylor E., Lieutenant, Medical Corps. Report arrival at Chickamauga Park, Ga.

Brooks, William H., Major, Medical Corps. Ordered to Columbus Barracks, Ohio, for temporary duty; to be relieved from duty at Presidio, San Francisco, Cal., upon completion of temporary duty at Columbus Barracks, Ohio, and will then proceed to Recruit Depot. Fort McDowell, Cal., for duty, relieving Lieutenant Colonel Euclid B. Frick, Medical Corps.

Brown, Henry L., Captain, Medical Corps. Reported for duty at Chickamauga Park, Ga.

Fisk, Owen C., Lieutenant, Medical Reserve Corps. Ordered from Fort Crook to Fort Omaha, Neb., for temporary duty.

Frick, Euclid B., Lieutenant Colonel, Medical Corps. Upon being relieved from duty at Fort McDowell, Cal., will proceed to and take station at the Presidio of San Francisco, Cal.

Gosman, George H. R., Major, Medical Corps. Reported for duty at Chickamauga Park, Ga.

Gray, William W., Colonel, Medical Corps. Leave of absence extended one month.

Griswold, W. C., Lieutenant, Medical Reserve Corps. Left Fort Ogelthorpe, Ga., en route to Camp of Instruction, Chickamauga Park, Ga.

Harris, Herbert I., Lieutenant, Medical Reserve Corps. Granted leave of absence for one month and fifteen days.

Heterick, R. H., Lieutenant, Medical Reserve Corps. Left Fort Ogelthorpe, Ga., en route to Camp of Instruction, Chickamauga Park, Ga.

Kramer, Floyd, Lieutenant, Medical Corps. Left Fort Robinson, Neb., en route to Fort D. A. Russell, Wyo. Target and Manœuvre Reservation, Wyo., for duty.

Mills, Frederick H., Lieutenant, Medical Reserve Corps. Granted four months' leave of absence, about September 15, 1910.

Mount, J. R., Lieutenant, Medical Corps. Reported for duty at Camp Dickinson, Chicago, Ill.

Northington, E. G., Lieutenant, Medical Reserve Corps. Report arrival at Chickamauga Park, Ga.

Register, Edward C., Lieutenant, Medical Reserve Corps. Assigned to permanent duty at Fort H. G. Wright, N. Y.

Roberts, William M., Major, Medical Corps. Left Fort Thomas, Ky., en route to camp at Gettysburg, Pa.

Slater, E. F., Lieutenant, Medical Reserve Corps. Granted twelve days' leave of absence about August 15, 1910.

Smith, Allen M., Major, Medical Corps. Left Washington, D. C., on thirty days' leave of absence.

Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending July 9, 1910:

Bloedorn, Walter A., Assistant Surgeon. Detached from duty at the Naval Hospital, Las Animas, Colo.; granted two weeks' leave, upon completion of which, ordered to temporary duty at the Navy Yard, Mare Island, California.

Camerer, Clyde B., Assistant Surgeon. Detached from duty at the Naval Hospital, Norfolk, Va., and ordered to duty at the Naval Hospital, Las Animas, Colo.

Geiger, Albert J., Passed Assistant Surgeon. Detached from duty at the Navy Yard, Mare Island, California, and such other duties as may have been assigned to him, and ordered to duty at the Naval Hospital, Mare Island, California.

Seaman, William, Passed Assistant Surgeon. Relieved from awaiting orders and ordered to duty at the Naval Recruiting Station, New York, N. Y.

Births, Marriages, and Deaths.

Married.

Gratton—Salliotte.—In Detroit, on Tuesday, June 28th, Dr. Henri C. Gratton and Miss Elizabeth Salliotte.

Legg—Barger.—In Philadelphia, on Wednesday, June 29th, Dr. Albert Neil Legg and Miss Clara Wood Barger.

McGlannan—Law.—In Philadelphia, on Saturday, July 2d, Dr. Alexius McGlannan and Miss Sally P. Law.

Rhoades—Baxter.—In Elizabeth City, North Carolina, on Thursday, July 7th, Assistant Surgeon George C. Rhoades, United States Navy, and Miss Elizabeth S. Baxter.

Died.

Adams.—In Schofield Barracks, Hawaiian Territory, on Sunday, July 3d, Lieutenant Paul A. Adams, Medical Reserve Corps, United States Army.

Anderson.—In Detroit, on Monday, June 27th, Dr. Willis S. Anderson, aged fifty-one years.

Aspinwall.—In Lynn, Massachusetts, on Friday, July 1st, Dr. John Aspinwall, aged seventy-nine years.

Beer.—In Fairview, Illinois, on Thursday, June 23d, Dr. S. B. Beer, aged seventy-two years.

Bloch.—In New York, on Sunday, July 3d, Dr. Clement Bloch, aged forty-seven years.

Burke.—In Louisville, Kentucky, on Wednesday, June 29th, Dr. Robert Emmett Burke, aged twenty-six years.

Cleaver.—In Lebanon, Kentucky, on Monday, July 4th, Dr. W. W. Cleaver, aged eighty-three years.

Davison.—In Ebensburg, Pennsylvania, on Friday, July 1st, Dr. Thomas J. Davison, aged seventy years.

Findley.—In Atlantic, Iowa, on Saturday, June 25th, Dr. D. Findley, aged eighty years.

Gerry.—In Catonsville, Maryland, on Saturday, July 2d, Dr. Nathaniel R. Gerry, aged seventy-eight years.

Grycza.—In Toledo, Ohio, on Friday, June 24th, Dr. Alexander Grycza, aged forty-six years.

Hewitt.—In Summit, New Jersey, on Thursday, July 7th, Dr. Charles Nathaniel Hewitt, of Minneapolis, aged seventy-five years.

Lyons.—In New York, on Tuesday, July 5th, Dr. Frederick Augustus Lyons, aged fifty-six years.

Mahon.—In Nanticoke, Pennsylvania, on Thursday, July 30th, Dr. William Trect Mahon, aged fifty-nine years.

Richmond.—In Denver, Colorado, on Friday, July 1st, Dr. Charles B. Richmond, aged fifty-six years.

Smith.—In Hominy, North Carolina, on Sunday, June 26th, Dr. Chester H. Smith, of Arcadia, Florida, aged fifty-five years.

Sonnemann.—In Milwaukee, Wisconsin, on Thursday, June 30th, Dr. Charles L. Sonnemann.

Walker.—In Rochester, Michigan, on Thursday, July 7th, Dr. R. J. Walker, of Toledo, Ohio.

New York Medical Journal

INCORPORATING THE

Philadelphia Medical Journal and The Medical News

A Weekly Review of Medicine, Established 1843.

VOL. XCII, No. 4. NEW YORK, JULY 23, 1910. WHOLE No. 1651.

Original Communications.

THE BONE CALLED "LUZ."

BY FIELDING H. GARRISON, M. D.,
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Among the many shafts of sarcasm which the author of *Hudibras* aimed at the Rump Parliament, the following, if it did not afford "laughter for a month and a good jest forever," may well have furnished "argument for a week" among anatomists:

> The learned Rabbins of the Jews,
> Write there's a bone which they call Luz
> I' the rump of man, of such a virtue,
> No force of nature can do hurt to;
> And therefore at the last great day,
> All th' other members shall, they say,
> Spring out of this, as from a seed
> All sorts of vegetals proceed;
> From whence the learned sons of art
> *Os sacrum* justly style that part.
> Then what can better represent
> Than this Rump Bone, the Parliament,
> That after several rude ejections,
> And as prodigious resurrections,
> With new reversions of nine lives,
> Starts up and like a cat survives?[1]

Was the sacrum really the bone to which Butler refers, and if so how did it come by the name of Luz? The term in question is derived from an old Aramaic word *lus*, meaning a nut or almond, and for this reason the hypothetical bone Luz was styled the *Judenknöchlein* by the earlier German anatomists. The first reference to the name Luz in any work on anatomy is to be found in the Frankfurt edition of the *Theatrum anatomicum* of Caspar Bauhinus (1621)[2] and reads substantially thus: "Hebrew writers affirm that there is a bone in the human body just below the eighteenth vertebra which cannot be destroyed by fire, water, or any other element, nor be broken or bruised by any force; this bone God shall, in his exceeding wisdom, water with the celestial dew, whence the other members shall be joined to it, coalescing to form the body, which breathed upon by the Divine Spirit, shall be raised up alive. Such a bone they call Lus (not Luz); and its site, they say, is in the spine, from the eighteenth vertebra to the femur. The author of this fable is the Rabbi Uschaia, who lived 210 A. D., about which time he wrote the book called *Bereschit Rabbi*, i. e., *Glossa magna in Pentateuchum*, from which many later Rabbins have taken this fiction. This bone, they say, can never be burned or corrupted in all eternity, for its ground substance is of celestial origin and watered with the heavenly dew wherewith God shall make the dead to rise, as with yeast in a mass of dough. They insist, moreover, that this bone will outlast all the others because it does not assimilate food as they do and because it is harder than the rest, being the fundamental part of the body, from which it is built up. We read further that the Emperor Hadrian once asked Rabbi Joshua, the son of Chanin, how God would resurrect man in the world to come. He made answer: From the bone Luz in the spinal column. Whence Hadrian asked him how he came by this knowledge and how he could prove it. Whereupon Rabbi Joshua produced the bone so that he could see it. When placed in water it could not be softened; it was not destroyed by fire, nor could it be ground by any weight; when placed on an anvil and struck with a hammer, the anvil was broken in sunder but the bone remained intact. Munsterus says the Rabbins believe it to be located in the neck. But Vesalius writes that this ossicle is called Albadaran by the Arabs, resembling a chickpea in size and shape, and he questions whether, being notably hard, it may not be the ossicle between the two bones of the great toe. Hieronymus Magius represents that, according to the Talmudists and other Hebrew commentators, the real bone is near the base of the skull, whether it be in the base itself or in the spine. To others it stands apart as the twelfth of the dorsal vertebræ, with which we incline the head and bend the neck. But what Joshua said to Hadrian the Emperor, no one can be persuaded to believe. For if bones, as Plato bears witness, are highly durable, nevertheless we see daily that they can be pulverized by hammer or stones or reduced to ashes by fire; as Plato testifies and the ancients point out, only the teeth can survive, being more enduring than the fire which subdues and effaces all other remains." So far Bauhinus, who winds up with sundry superfluous slaps at the learned Rabbins for their credulity.

The bone which Rabbi Ushaia locates "*in fine octodecim vertebrarum*," which the other Rabbins describe variously as "*os spinæ dorsi in homine*," "*os parvum in fine vertebrarum*"; and "*lus vertebrarum*," which Baal Aruch describes as "like an almond" (*simile amygdalæ*)[3] and Cornelius Agrippa

[1] Butler, Hudibras. Part iii, canto ii, 1615-1630.

[2] Lib. i, cap. 48, p. 167. The passage is not to be found in the earlier editions of Bauhinus.

[3] Cited by Rolfink in *Dissertatio anatomica*, lib. ii, cap. 54.

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as "the size of a shelled pea" (*magnitudine ciceris mundati*)[4] was never found as such, and was held by different anatomists to be the sacrum, the coccyx, the twelfth dorsal vertebra, one of the Wormian bones in the skull, and one of the sesamoids of the great toe. We may first consider what has been said about it in relation to the spine.

The notion that there were only eighteen vertebræ in the spine was one of the many errors that were perpetrated and propagated by the anatomists of the School of Salernum, who believed that the lumbar vertebræ were part of the cauda equina. Thus Magister Ricardus, as cited by Hyrtl,[5] states conclusively: "*Sunt autem octodecim vertebræ, in collo sex, in dorso duodecim.*" From this mediæval viewpoint the twelfth dorsal vertebra (the nineteenth in all) should be the bone Luz, and the elder Retzius argues[6] that this idea might very well have been entertained for the following reasons: Even Galen had remarked upon this part of the spine as a sort of centre or turning point, above or below which the vertebral apophyses point in opposite directions. As we know, however, Galen's anatomy, based largely upon that of the lower animals which he dissected, is only rudimentary and diagrammatic so far as man is concerned. But the twelfth dorsal in man does stand out from the other vertebræ in that its inferior articular processes are convex and turned outward like those of the lumbar vertebræ below it, while the superior and inferior tubercles on its transverse processes correspond to the mammillary and accessory processes of the lumbar vertebræ. The twelfth dorsal thus marks the point of transition between the dorsal and lumbar vertebræ, and, to show that Galen's view is not unreasonable, Retzius gives cuts representing the spines of two mammals he had prepared—the fox and the jumping rat, or jerboa. In the former (*Canis vulpes*), the turning point of the spine is at the eleventh dorsal, the spinous processes of the vertebræ above and below this bone pointing in opposite directions, while its costal and accessory processes are more uniformly developed than in the other vertebræ. In the spine of the jerboa (*Dipus sagitta*) the turning point is at the tenth dorsal, above and below which the spinal apophyses again point in opposite directions. These comparative data show how Galen may have come to regard the twelfth dorsal as the centre of the spine and how the Aramaic tradition of the Luz may have become assimilated to this notion through the devout interest of the Jewish and Arabian physicians in the Galenical writings. The idea that the spine is the centre and origin of all the other bones and parts of the body is as old as Aristotle, who detected the fœtal heart beats three days after the formation of the embryo and had probably seen the notochord and speculated as to its significance. Goethe's well known theory that the bones of the skull are developed from the vertebræ is a variant of this idea and that Aristotle's philosophic generalization should lead to romancing when it fell into the hands of the scribes is (Retzius thinks) perfectly natural and simple of explanation.

That the author of *Hudibras* and other writers should have confounded the Luz with the os sacrum is also natural enough on account of the name given to the bone by the ancients, and for the reason that the Talmudists, as cited by Bauhinus, assert that the bone extends anywhere from the eighteenth vertebra to the femur (*quod situm dicunt in spina dorsi post decimam octavam vertebram ad os femoris*). The usual derivation of the term *os sacrum* is from the Greek ἱερὸν ὀστεον (sacred bone), and this is commonly explained on the ground that the adjective ἱερός was often synonymous with μέγας (large). In aid of this theory Hyrtl[7] cites Spigelius, *Græcis omnia magna sacra vocabantur*, and Cælius Aurelianus, *Majora omnia, vulgus sacra vocat*. This derivation Hyrtl holds to be more correct than the one which treats the Latin adjective *sacrum* as equivalent to *detestandum*,[8] in this instance on account of the proximity of the bone to the rectum. Ramsbotham,[9] who once wrote a famous treatise on obstetrics, holds that ἱερόν is a corruption of the Hebrew "Heron," signifying conception, gestation, parturition, from which he thinks is derived the name of the Goddess Hera, the Hellenic patroness of childbirth. In this view, our author claims, the Latins merely translated ἱερόν as *sacrum* without knowing its original meaning. In any case the bone which supports that part of the body which Lowell once called "the seat of the muses" (because in schoolboys knowledge was mainly imparted by the application of birchen rods to it) cannot be regarded as the true bone of Luz, because the latter was said to be small, almond shaped, and so hard as to be indestructible.

The assumption that the Luz may be the coccyx might seem reasonable at first sight, on account of the small size of the latter, and this, indeed, was the current Mohammedan view. Thus, Sale says, in his introduction to the *Koran:* "Mohammed has taken care to preserve one part of the body, whatever becomes of the rest, to serve as a basis to the future edifice. For he taught that a man's body was entirely consumed in the earth, excepting only the bone called al ajb, which we name *os coccygis* or rump bone; and as it was first formed in the human body, it will also remain incorruptible until the last day, as a seed from whence the whole is derived (Sale's *Koran*, 1821, p. 104). The only objection to this view would seem to be the friable, destructible nature of the coccyx itself, made up, as it is, of four rudimentary vertebræ; and the fact that the very derivation of its name (κόκκυξ) is from its resemblance to a cuckoo's bill. So Vesalius writes "*os cuculi, a similitudine rostri cuculi avis*," and from these considerations of size, shape, and relative hardness, it is plain that the coccyx cannot be the true Luz.

It was among the Wormian bones of the skull that the Luz was first sought for, according to Hyrtl, and of these the triangular Wormian at the

[4]Cornelius Agrippa, *De occulta philosophia*, lib. i, cap. 20, cited by Hyrtl.

[5]Hyrtl. *Das Arabische und Hebräische in der Anatomie*, Wien, 1879, 166.

[6]A. Retzius. *Om benet Luz* (Swedish text), Stockholm, 1855, 2-4

[7]Hyrtl. *Lehrbuch der Anatomie des Menschen*, 17. Auflage, Wien, 1884, p. 345.

[8]*Ibid*, 346. For instance, in the Laws of the Twelve Tables: "*Homo sacer is est, quem populus judicarit ob maleficium.*" And also "*Patronus, si clienti fraudem fecerit, sacer esto.*"

[9]F. H. Ramsbotham. *Obstetric Medicine and Surgery*, London, 1867, 698.

junction of the sagittal and lambdoidal sutures was usually regarded as the true sacred bone, all sorts of mystic properties having been ascribed to it. Taken from the skull of an executed criminal, it was supposed to have marvelous curative properties, notably in epilepsy, whence it was called the *ossiculum antiepilepticum Paracelsi.*[10] But as this particular Wormian is not always found in the cranium, and there may be as many as three hundred other Wormian bones, it became clear that the Luz must be sought elsewhere.

There remains the assumption that the Luz might be one of the sesamoids of the great toe, and this theory can best be considered in the light of what Vesalius says about it. At the time Vesalius wrote, the Jewish tradition had been pretty well filtered through Arabic sources and, in the drastic passage subjoined, he disposes of it with his usual lively scorn for anything savoring of superstition. Speaking of the sesamoid bones in the foot, Vesalius says:[11] "Another one of these bones is that which the magicians and followers of occult philosophy so often call to mind as being fashioned like a chickpea, liable to no decay, and which, buried in the earth after death, will (they affirm) reproduce man like a seed on the day of the Last Judgment. This may perhaps be the bone on either side, but is more likely to be the exterior, which is somewhat like a shelled pea, if we think of the middle part [of the split pea]; for on bringing both bones in apposition we should obtain a whole pea. Then the internal ossicle is so large in men of great stature that a die might easily be made out of it. These bones differ, however, from those noted by the Arabs in that they may be burned or broken like other bones, as well as in being surely liable to decay to some extent, although of durable structure. But the dogma which asserts that man will be regenerated from this bone, of which we have just narrated the immense fiction, may be left for elucidation to those philosophers who reserve to themselves alone the right to free discussion and pronouncement upon the resurrection and the immortality of the soul. And even on their account we should attach no importance whatever to the miraculous and occult powers ascribed to the internal ossicle of the right great toe, however much one may be concerned about it. At our public dissections and even as an amateur, we have often obtained a better supply of these bones than those truculent male strumpets of the Venetian horde, who to obtain the bone for purposes of comparison, as also the heart of an unpolluted male infant [*pueruli virginis masculi*], lately killed a child, cut the heart from its living body, and were punished, as they richly deserved, for the foulest of crimes. Moreover, this ossicle, called Albadaran by the Arabs and the truly occult and obscure philosophers alluded to, is less known to actual students of anatomy than to certain superstitious men who are capable of likening the fourth carpal bone (*quartum brachialis os*) to a chickpea." This passage, a translation from the *editio princeps* of the *Fabrica* (Basle, 1543) was, on account of the extreme violence of its language, not a little pruned and condensed in later editions of Vesalius's great treatise. But with the publication of the *Fabrica,* anatomy became a practical working science, and the bone of Luz and other anatomical mares' nests were gradually relegated to the limbo of folklore. The legend survived for a span, as we find Bauhinus and Butler discussing it late in the seventeenth century. But the time did come when, as Hyrtl aptly concludes, *die Fabel ist vergessen, die Worte sind verklungen.*[12]

[10] Hyrtl, *Das Arabische und Hebräische in der Anatomie,* pp. 167-168.

[11] Vesalius, *De humani corporis fabrica.* Basileæ, 1543, p. 126. The name Albadaran, to which Vesalius alludes, was always applied to the larger internal sesamoid of the great toe by the older anatomists, but Hyrtl holds that it is not good Arabic, being merely a fanciful term like Abracadabra, invented by the Cabbalists and Mystics, the *occulti et tenebriosi philosophi,* to whom Vesalius refers (Hyrtl, *op. cit.,* p. 24).

[12] Readers who wish to pursue the Aramaic tradition further may consult with profit Rabbi Kohler's learned and interesting paper in the *Jewish Encyclopædia* (viii, p. 219, 1st col.), which contains many valuable references. Rabbi Kohler is inclined to think that the legend of the Luz may owe its origin to the ancient Egyptian rite of "burying the spinal column of Osiris" at the close of the period of mourning for the god and prior to the celebration of his resurrection.

THE CLINICAL VALUE OF THE SERODIAGNOSTIC METHODS IN THE DIAGNOSIS OF SYPHILIS.*

By William Litterer, A. M., M. D.,
Nashville, Tennessee,
Professor of Bacteriology and Pathology at Vanderbilt University Medical College.

Since the discovery of the *Treponema pallidum* the proof now certain of its position as the ætiological factor of syphilis, no one subject in connection with the disease has excited such widespread interest as the serum diagnosis of syphilis or the Wassermann test, a test which reveals the presence of the disease even in the absence of symptoms. Although only three years have elapsed since the Wassermann reaction was described, it has become at the present time a well established diagnostic method and it, or its modifications, are now in use in all large medical centres. The method as first devised depends on the principle, formulated by Bordet and Gengou in 1901, of the complement fixation which takes place when an antigen meets with its homologous inactive immune serum. If on further addition to the serum, erythrocytes, and hæmolytic serum (inactivated in order to free it of its complement) no hæmolysis can occur the complement has become bound, because the hæmolysin has no free complement.

Wassermann used as a hæmolytic system, 1, 1 c.c. of a five per cent. suspension of washed red blood cells of the sheep; 2, two units of hæmolytic amboceptor made by immunizing rabbit's to sheep's red blood cells; and, 3, as complement 0.1 c.c. fresh guinea pig serum. The syphilitic antibody was obtained from suspected patients. The maximum quantity of serum was 0.2 c.c. The antigen consisted of a watery extract of a liver of congenital syphilis known to be rich in *Treponema pallidum.* Wassermann considered at this time his antigen to be an extract of the specific organism, viz.: *Treponema pallidum* and the anchoring of the complement to be therefore a true antigen—antibody reaction.

Subsequent work on the nature of the antigen has, however, destroyed this view. It has been clearly proved by numerous investigators that the so called

*Read before the Section in Medicine of the Southern Medical Association, New Orleans, November 9 to 11, 1909.

antigen was not the *Treponema pallidum* or its product, but to be a substance, lipoid in nature, such as lecithin, cholesterin, the sodium salts of bile acids, etc. The watery or alcoholic extracts from organs seem to act the best. I prefer the guinea pig's heart, but use the congenital syphilitic organs when I can obtain them fresh.

A perusal of some of the numerous papers published on the value of the serodiagnosis of syphilis show that its clinical value is established, but when an attempt is made to find a scientific explanation of the reaction, the greatest difficulty is experienced to find any unanimity.

It must be confessed that it is true that actual syphilitic antibodies have not been clearly defined in syphilitic patients, further that the antigen present in normal and in syphilitic organs has not been demonstrated to be solely a derivative of the syphilitic virus.

Citron(1) in endeavoring to give a working hypothesis for the reaction, believed that the amboceptor present in syphilitic subjects possesses a complementophile affinity, but that its other affinity is somewhat complex in that it is not merely cytophilic for spirochætæ present in syphilitic organs, but is lipoidophilic.

Michaelis(2) is of the opinion that the Wassermann reaction does not reveal the presence of antibody against the cause of syphilis or its poisons, but some other substance which has no direct connection with the cause of syphilis, but which is found more abundantly in, or more easily from, syphilitic organs than from normal ones. It is manifestly apparent that the lipoid element in this reaction does not depreciate its value, on the contrary it may explain the lipoid degeneration in parasyphilitic diseases. The practical diagnostic value of the reaction in many thousands of cases examined by the best authorities, surely establishes it of distinct value despite laboratory criticisms concerning its actual scientific foundation.

An important contribution comes from Neisser(3) in Java, who made extensive studies with it on apes, with the general result that these animals never give the reaction unless infected, that the presence of the antigen can be demonstrated in the organs of infected animals within seven days after inoculation, long before the chancre appears; and that in untreated animals the serum reaction persists indefinitely, even for two and a half years, being strong evidence that the disease never undergoes spontaneous cure. He also found that mercury entirely prevents the development of the antigen in practically all the cases; iodine only in about half of them.

Interest naturally centres, however, on the results obtained, in the human subject. I shall not attempt to analyze all the publications on the subject for such a task would be stupendous. I will simply give a brief summary of the consensus of opinion concerning the latest interpretations of the Wassermann reaction. In manifest syphilis, i. e., patients with skin manifestations, lesions of the mucous membranes, etc., positive results will be obtained in ninety-five per cent. of the cases. It is remarkable how early this test will show after the appearance of the chancre. Butler examined ten patients before the appearance of the secondaries, and in all, the reaction was positive.

I examined seven patients before the secondaries appeared, and in five a positive reaction resulted, while in two, negative results were recorded. Several months later these two gave positive findings. The secondary manifestations in both of these patients were exceedingly mild and had not syphilis been suspected would in all probability have been overlooked. Only a faint rash appeared under their clothing and an occasional papule near the margin of the hair. This disappeared without treatment in one case, the patient refusing treatment in spite of the positive Wassermann test. Seven months later the patient had typical mucous patches on tonsil and soft palate. Vigorous mercurial treatment was instituted with a resulting disappearance of the patches. In the patches the *Treponema pallidum* was found in great numbers.

The Wassermann test will be of distinct value to syphilographers when they are uncertain as to whether what appears as a soft chancre is accompanied by a hard chancre. Several such cases have come under my observation and a positive Wassermann reaction has cleared up an otherwise obscure condition, especially with the failure of the demontration of the spirochætæ in the lesions. In internal medicine, neurology, pædiatrics, surgery, etc., the reaction becomes an exceedingly valuable aid to us. In the so called latent cases of syphilis about fifty-five per cent. will give a positive reaction. It is presumed that this fifty-five per cent. of positive reactions would coincide well with the fifty-five per cent. of patients with syphilis which would show old visceral lesions of syphilis at post mortem examinations. It is assumed on this basis that the test, when positive in every case, indicates activity of the syphilis whether invading some internal structure or affecting the nervous system.

As to parasyphilitics, in paresis from ninety-eight to one hundred per cent. will give a positive reaction. Such a high proportion, however, is not found in tabes, about sixty per cent. being positive.

In the majority of progressive paretics the spinal fluid is positive as to luetic antibodies, and this led Wassermann to an hypothesis that is worthy of repetition. He is of the opinion that long years of antibody production by the nervous system causes a pathological degeneration of it; that, therefore, progressive paralysis may be looked upon as a wear and tear disease caused by an overabundance of antibodies. The antibodies as a rule in infectious diseases in general disappear in convalescence or soon after. Not so with syphilis, since the antibodies may be found thirty, forty, or fifty years later. It is not known just how long the antibodies remain absent from a patient who has received a thorough course of antiluetic treatment. Later observations must determine this, since this is believed to be a point of incalculable importance to the syphilitic.

Butler (4), in discussing this phase of the question, makes the following pertinent observation, viz.:—that it would appear at this time that the serum reaction may prove a guide, an index, so to speak, to check up and control in a certain measure the destiny of our patient, and it seems not improbable that we might thereby be able to pilot him clear of assaults on his nervous system that result in cerebral or cerebrospinal syphilis, the parasyphilitic affections, or visceral lues. He further says that,

it is a well recognized observation that exactly those patients with syphilis who run a mild course and in whom the symptoms clear up early are often subsequently the subject of tabes or progressive paresis, in contrast to cases of apparently greater severity in which the patients are, as a result, subjected to repeated courses of treatment. He says, in the apparently severe, because it is not improbable in many of what may be termed mild cases, the syphilitic virus exhibits a selective action for the cerebrospinal system, and we may have resulting, a wear and tear disease of the nervous system from the too strong production of syphilitic antibodies. The reappearance of the reaction should at least be watched for in the syphilitic patient instead of awaiting for the development of the so called parasyphilitic diseases. Such diseases might possibly be obviated by the regular and methodical use of the Wassermann test as an index for the treatment (Butler).

According to Castelli (5), the genesis of the process producing the Wassermann reaction is different with the cerebrospinal fluid than with the blood serum. When the reaction is positive with the blood but negative with the cerebrospinal fluid the indications are to an early stage of the disease before nervous disintegration has taken place and specific treatment is advisable. When the reaction is positive in both it is a positive indication of an advanced stage of paresis or tabes provided the clinical symptoms confirm the diagnosis; the brain is not then in a condition to be benefitted by specific treatment. The positive reaction with the cerebrospinal fluid, therefore, seems to indicate an already somewhat advanced disintegration of the nervous centres, showing the presence in the cerebrospinal fluid of lipoids derived from the albuminoid complements.

Sachs (6), of New York, has observed beneficial results in both tabes and paresis by adopting strict antisyphilitic treatment until the character of the test has been altered as a result of the treatment. In doubtful multiple cerebrospinal sclerosis or brain syphilis, he regards the test as decidedly valuable in diagnosis and as an indication for treatment. It is also of much assistance in diagnosis of brain tumor or cases in which tumor is suspected. Much assistance is given by the test in hemiplegias, especially if the symptoms indicate thrombosis, suggesting the possibility of specific endarteritis. It has also been useful in epilepsy when syphilis has been suspected as the possible cause.

For some reason the application of the serum test to aortic disease has lagged behind its use in the study of nervous cases but the results that have been obtained are fully as convincing, and perhaps even more valuable from the therapeutic point of view than the results in tabes paralysis. Frankel and Much first applied the Wassermann test to the blood of six cadavers showing aortitis with aortic insufficiency. In every one the reaction was positive.

Citron (7) has applied the Wassermann reaction in the past year and a half to all the cases of aortic insufficiency coming to Kraus's clinic. He found that 62.6 per cent. showed a positive serum reaction, although only fourteen per cent. of all cases gave a definite clinical evidence of syphilis. Further proof as to the ætiology of the nodular form of aortitis has been recently shown by Wright and Richardson (8), of Boston, in which they discovered spirochætæ morphologically identical with the *Treponema pallidum* in all of five cases of aortitis examined by them.

Referring to the question whether a positive reaction in an individual is an indication for treatment, Lesser (9) has applied this test in more than 2,000 cases of syphilis and has given this phase of the subject considerable thought. His conclusions are that treatment must be more intense than is at present customary in order to transform the positive response to the test into a negative. The transformation of positive into negative findings was obtained by him in only thirty-five per cent. under ordinary dosage, and in a number of cases in which the reaction had become very faint under this dosage it had become positive again when the test was applied a few weeks later. He asserts that it is necessary to continue treatment until the hæmolysis in the test occurs promptly as long as it is sluggish the treatment is required.

MERCURIAL ADMINISTRATION.

I have made a few observations relative to the mode of administration of the mercury, using the Wassermann test as a guide to proper assimilation of the drug. Two cases coming under my observation which have been studied in detail will illustrate the importance of the reaction relative to proper assimilation:

CASE I. A negro, male, age twenty-five, strong and robust, noticed chancre on penis three days before I saw him. The *Spirochæta pallida* was found on first examination. The Wassermann reaction at that time was negative, but ten days later proved to be distinctly positive. Mercurial inunctions were given regularly. At the end of one week the Wassermann reaction still showed strongly positive. No appreciable effect in the reaction was discernible by the second week of mercurialization. But by the third week a decided change was noticed, and at the end of the fourth week total disappearance of the reaction resulted. Mercury was entirely withdrawn from the case with a view of ascertaining how soon the reaction would reappear. The test was made every four days. On the sixteenth day a partial test was obtained, and by the twenty-eighth day the test was practically restored to its former state. Mercurial inunctions were again given and in three weeks the Wassermann reaction disappeared. The inunctions were withdrawn and the test reappeared in five weeks. Instead of giving the patient the inunctions, I endeavored to ascertain what difference, if any, that would be produced in the Wassermann reaction as a result of administering the mercury per os. The biniodide of mercury pills were used with the result that it required five weeks in order to obliterate the Wassermann reaction. A positive reason for the delayed disappearance of the reaction as compared with the inunction method lies in the fact that the mercury was not properly assimilated. The pills were withdrawn and in five weeks the reaction came back. Inunctions were then given the patient and in less than three weeks the Wassermann reaction was negative.

CASE II. A negro, male, age thirty-two, with chancre on penis for ten days. The *Spirochæta pallida* was found in the sore in great numbers on the first examination. The Wassermann reaction proved to be positive on the initial trial. Instead of giving mercury by inunctions I decided to find out how rapidly would it take for the reaction to disappear by the hypodermic injection of mercury. Using the gray oil, the reaction was made every four days. On the twentieth day a decided change was noticed. Four days later a total disappearance of the reaction was recorded. The injections were stopped, and in three weeks

the reaction was positive. The gray oil injections were again given which resulted in the disappearance of the reaction in seventeen days. A withdrawal of the injections caused the reaction to appear in thirty days. The biniodide of mercury pills were then given with the result that it required six weeks to obliterate the Wassermann reaction.

From these two cases it would seem to indicate that the giving of mercury by the inunctions and injection methods, are far better than by administering it by mouth, in the form of biniodide pills. I am not prepared as yet to state from experiments whether the injection method has an advantage over that of the inunction. I have at present two cases in which I am testing with the Wassermann reaction alternating the injection method and the inunction method with the purpose of ascertaining their relative merits. Quite a number of cases should be tested by this process and other ways before we can arrive at definite conclusions.

It seems to me by such a method as the Wassermann reaction enabling one to detect how much mercury a given patient can tolerate without giving enormous doses as well as ascertaining whether the mercury is being assimilated—if proved to be absolutely trustworthy—will be of incalculable value in the treatment of syphilis in all of its phases.

Another interesting field which this reaction opened up was the discovery by Landsteiner, Müller, and Potzl that the serum of dourine affected animals gives positive results. This brings one to the conclusion that the reaction is common to protozoic diseases. The protozoon under question in Landsteiner's cases was the *Trypanosoma gambiense*. Further experiments with trypanosomic diseases were carried out by Hartoch and Jakimoff using the various kinds of tryapanosomata (dourine, nagana, mal de Caderas, surra), in order to see whether a certain dependent condition was present between the so called specific receptor and the various specific antigens; but the result was in all cases the same.

These results are interesting, and they show that a specific antigen is not necessary for the reaction, also that the reaction is not a simple combination of an antigen with the specific antibody, and further that syphilis must be a protozoic disease, confirming Schaudinn's discovery of the *Treponema pallidum*.

Eichelberg got positive results in frambœsia, sleeping sickness, dogs infected with piroplasma, and hens infected with the hen spirochæta. Many cases of scarlet fever have been reported by a number of workers as being capable of producing the reaction. This has strengthened the views of some that the ætiological factor of the disease is protozoic in its origin. In many cases of leprosy and in practically all cases of yaws, the reaction is positive.

ORIGINAL OBSERVATIONS.

Out of 377 of supposedly nonluetic patients suffering from various diseases, I found a positive reaction in two cases of advanced carcinoma, one of advanced sarcoma, one of hydrophobia, one of profound malaria (æstivoautumnal), one of noma, and two cases of pellagra. These cases were obtained from the Nashville City Hospital, the Vanderbilt Medical Hospital, and a few from private patients of physicians. The two positive carcinoma cases that gave positive reactions show the following history:

The first case was a white married female, age fifty-seven, mother of three children, had had all the diseases incident to childhood. Denied all venereal trouble, no glandular involvement or throat trouble, no eruption on skin. One year and a half ago a diagnosis of carcinoma of cervix was made by microscope. She was in the last stages of carcinomatous disease. Recently her blood was withdrawn and a Wassermann reaction resulted positively. The second case, a white married female, age fifty, mother of two children, had had all the diseases of childhood. Denied all venereal trouble. No glandular involvement or throat trouble, no history of rash on body. Had pneumonia about twenty-two years and when about forty years of age contracted influenza. She noticed a tumor in the breast two years ago which was removed and pronounced to be carcinoma by microscope. Recurrence resulted and a second operation was performed. She was in the last stages of this disease and her blood had shown on three different occasions a positive Wassermann. The third case was the advanced sarcomatous one, occurring in a white male, age twenty-six, who had always been healthy save the diseases of childhood. Denied all venereal trouble, no glandular involvement, or history of sore throat or skin eruptions. About one year ago he noticed a small tumor, of the size of a hazel nut, on the inner aspect of leg. The tumor was examined microscopically, and showed sarcoma. Amputation was advised, but the patient refused. Several months later a general sarcomatosis developed. When the blood was obtained the patient was in the last stages of this disease. The Wassermann reaction was positive two different times. The fourth case was that of hydrophobia, occurring in a married white male, age thirty-five, who had always been healthy. Denied syphilis, but admitted having had gonorrhœa. He was bitten on the hand by a rabid dog. Three months later typical symptoms of hydrophobia developed. After death I obtained sufficient amount of blood for the Wassermann test, which was positive. The case proved to be hydrophobic by finding of the Negri bodies in the brain, and furthermore, by the inoculation test. The fifth case was one of malaria (æstivoautumnal) occurring in a white married male, age twenty-seven, who had contracted pneumonia when eighteen years old and at twenty-four had a severe attack of influenza. Denied syphilis, but admitted gonorrhœa. For the past twelve years had had malaria. When the blood was obtained the patient was suffering from a profound attack of æstivoautumnal type of malarial poisoning from which the patient died in two days time. The reaction in this case was quite positive. The sixth case was one of noma, occurring in a child, four years old, no history of hereditary syphilis. Father and mother were both living and healthy. The blood on three different occasions, using different antigens, gave a positive reaction. The seventh case was that of a typical pellagra, occurring at the Baptist Orphanage in a white boy, age thirteen. No history of hereditary syphilis. Six months ago, (May, 1909), in making blood cultures from the case with a view of determining the ætiological nature of pellagra, I also obtained enough blood for the Wassermann test and was

surprised to find that it gave a marked positive reaction. Five months later the patient died. A complete autopsy was held and the findings both macroscopically and microscopically confirmed our diagnosis of pellagra. No syphilitic evidence could be made out. Another sample of blood was obtained at autopsy for the Wassermann test, using three different antigens, all giving a markedly positive reaction. The eighth case was that of a mild case of pellagra, also at the Baptist Orphanage, in a girl, age twelve years, giving no history of hereditary syphilis. The Wassermann reaction in this case was not at all pronounced, but the deviation of the complement always showed more than the control. Three other cases of pellagra were tested, with negative results in two, while in the other case a positive reaction resulted, but the patient gave a positive syphilitic history.

I wish to report a case suffering from carcinoma that is pertinent to the three malignant cases (carcinoma and sarcoma) in which no syphilitic history was obtainable. The case in question gave a positive reaction when no history or sign of syphilis could be ascertained. She left the hospital, returning six months later with the pupil changes and other manifest signs of tabes. Unless this case had been the second time examined, it would have been put in the category of positive results by malignant diseases. Undoubtedly there are quite a number of cases that give absolutely negative clinical histories as to syphilitic infection, in which the patients unquestionably have contracted the disease. In these cases they either are practising deception or they have contracted the disease without their knowledge.

It is a well known fact among syphilologists that an individual may have tertiary symptoms as his first manifestation, the primary chancre can be extragenital and overlooked, and secondary symptoms are by no means invariably the rule.

ABORTIVE TREATMENT.

A great many venereal specialists maintain that the abortive treatment of syphilis undoubtedly has a marked influence on the course of the disease. A positive result in the primary stage is of enormous value since one can start treatment at once. McDonagh (10), Müller, and Morawetz, who have had wide experience (over 5,000 tests), in Professor Finger's clinic in Vienna, maintain that if a patient has a chancre diagnosticated clinically, and *Spirochæta pallida* positive, but gives a negative Wassermann reaction, the proper course to pursue is to excise the chancre, and test the blood from time to time, since it is possible the patient may have no further sign. I have in mind one case in particular in which I found a great many specimens of *Treponema pallidum* in the three day old chancre and the blood of the patient gave a negative Wassermann test. The chancre was removed and vigorous antisyphilitic treatment instituted with the result that, although it has been more than one year and a half since he contracted the disease, still he has never shown the slightest evidence of a syphilitic manifestation. This patient's blood has never shown the Wassermann test. Other cases of a similar character can be cited which will be incorporated in detail in a future paper.

CONCLUSIONS:

1. In internal medicine, neurology, pædiatrics, surgery, in fact in every department of medicine, the Wassermann test is of inestimable value as corroborating or dispelling the suspicion of an active specific disease.

2. Under our present interpretation, a positive reaction means that an active syphilis exists and that it indicates that there should be an exhibition of antisyphilitic treatment.

3. Since antisyphilitic treatment invariably causes the disappearance of the Wassermann reaction, it may be an index as to the efficiency of a line of treatment in that particular case.

4. There are some nonluetic blood sera which cause a fixation of the complement. These sera, however, are so rarely met with, and then not infrequently in such extensive pathological processes, that they do not vitiate the clinical value of the reaction.

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THE NOGUCHI REACTION IN SERODIAGNOSIS.*

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The object of this paper is to discuss the principles and technique of the Noguchi method for the diagnosis of syphilis, but I have decided that a brief review of the Wassermann reaction and its underlying principles is necessary for a proper understanding of the subject, as the Noguchi reaction differs from the Wassermann only in its simplified technique.

Both reactions depend upon the fact that certain reagents will cause complete hæmolysis when brought into contact with a solution of red corpuscles, in a test tube. This result is indicated by the diffuse, clear, red color of the solution, and the disappearance of the blood cells. If the syphilitic antibody is present in the mixture hæmolysis will not occur.

In 1888 Nuttall proved that normal blood serum had certain bactericidal properties, which Buchner demonstrated could be destroyed by heating the serum to 56° C. Together with this fact it was found that guinea pigs could be immunized to chol-

*Read before the George Washington Alumni Medical Society, January, 1910.

era by injecting the bacilli in increasing doses, allowing an interval between each injection. During this time the immunizing agent is developed in the blood in gradually increasing amounts, as shown by the fact that such blood possesses much greater bacteriolytic powers for the cholera bacilli than normal sera. This increased bactericidal property is also destroyed by heating the blood to 56° C., but the addition of a little fresh normal serum to the mixture restores the power.

In 1901 Bordet tried injecting one animal with the blood corpuscles of an animal of a different species, and found that after a few injections the serum of the injected animal had acquired the power to rapidly dissolve the red cells of the second animal, when brought into contact with them in a test tube. He found that this action was specific—that is, the immune serum was only actively hæmolytic toward the corpuscles of the kind of animal whose blood was the source of the power. As in the case of the bacteriolytic serum mentioned before, he found that this property was destroyed by heating the serum to 56° C. and could be restored by the addition of a little fresh normal serum.

This series of experiments was duplicated by Metchnikoff, who concluded that the injected bacteria, or foreign blood cells, caused the production of a specific antibody in the serum of the injected animal, and it is this antibody, in conjunction with another substance present in all serum, which causes the solution of the specific bacteria, or foreign blood cells, which originally produced it.

In 1902 Bordet and Gengou made a combination of the phenomena heretofore discussed, by first making a mixture of the serum of an animal immunized against a given microorganism, together with an emulsion of the microorganism and fresh normal serum, and then adding to this the serum of an animal immunized to foreign red corpuscles, together with a suspension of the red cells in question, and found that in this combination hæmolysis did not occur.

They concluded that the specific antibacterial body of the first serum had combined with or "fixed" the substance in the second serum, whose presence was necessary for the specific action of the hæmolytic serum, so that hæmolysis could not occur.

Such a fixation of the serum is possible only when antibodies are present in the mixture. These antibodies are now called "amboceptors," and the substance in the fresh serum necessary for their action is called the "complement."

However, this fixation of complement by the antibody will not occur unless there is present in the mixture the kind of agent which originally caused the production of the antibody in the patient's blood. This specific causative agent, microorganism, or foreign blood cell, is called an "antigen," and when a serum is treated with its own antigen in a test tube, the antibody, or amboceptor, and antigen will together unite with the available complement, so that if red corpuscles and a hæmolytic amboceptor are subsequently added, hæmolysis will not occur, because the necessary free complement will be absent.

Now, to recapitulate: These experiments prove that in the serum of an animal immunized against bacteria, or red blood cells, there are developed two substances, and that their presence is necessary for the specific solvent action of that serum upon the agent originally producing them. One of this group will withstand heating to 56° C. and is found only in the specified serum. This is the antibody or amboceptor; the other is the complement and is contained not only in the specific serum, but also in all normal sera.

These lytic sera belong to Ehrlich's third order of receptors, and according to his view these developed antibodies, or receptors, have two combining points, hence the name, amboceptor; and, as described in the preceding experiments, one point of this amboceptor will unite with the complement and the other with the antigen.

The difference, then, between specific hæmolytic or bactericidal serum and a normal one, is the presence of this amboceptor in the former.

The relation of the amboceptor and antigen to the complement in the bacteriolytic and hæmolytic systems has been graphically represented by Dr. H. F. Swift in the following diagrams (see the *Journal of Cutaneous Diseases*, xxvii, pp. 281 et seq., July, 1909; and *New York Medical Journal*, xci, pp. 644 et seq., March 26, 1910):

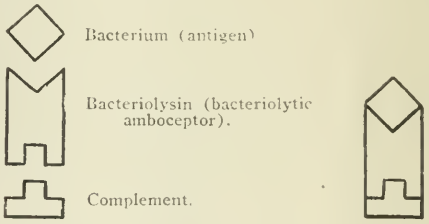

Fig. 1.—Bacteriolytic system. Fig. 2.—Bacteriolytic system, joined.

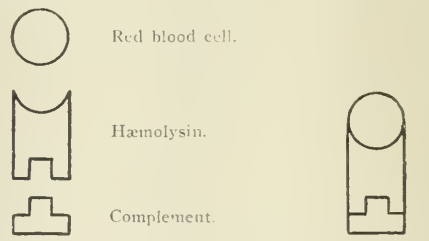

Fig. 3.—Hæmolytic system. Fig. 4.—Hæmolytic system joined to produce hæmolysis.

Fig. 5.—Complement and antigen free.

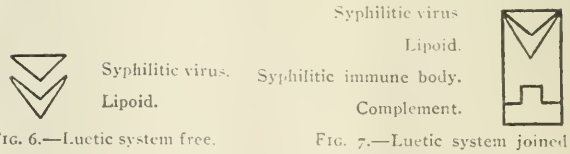

Fig. 6.—Luetic system free. Fig. 7.—Luetic system joined

If in a test tube a mixture is made containing an emulsion of bacteria and their specific antibody, in the patient's serum, with a definite amount of complement, and, then to this be added red corpuscles with their specific amboceptor, hæmolysis will not

take place, because the first factors of the mixture would have "fixed" the available complement, leaving none to complete the hæmolytic system.

In 1906 Wassermann made an adaptation of this Bordet-Gengou reaction; for after the discovery of the *Spirochæta pallida* in 1905, he conceived the idea that the spirochætæ should give rise in the human body to specific antibodies, and, in collaboration with Neisser and Bruck, found that a watery extract of liver from a syphilitic fœtus and the serum of a syphilitic patient would "fix" fresh complement, while other sera produced no such effect.

Briefly, Wassermann's method for demonstrating the presence of this antibody is as follows:

Place in a test tube an extract of syphilitic liver, as an antigen, and to this add the blood serum of a syphilitic patient, with a complement of fresh guinea pig serum. After a period of incubation, add well washed sheep corpuscles and an antisheep hæmolytic amboceptor in the form of serum from a rabbit whose blood has been rendered actively hæmolytic to sheep's corpuscles by repeatedly injecting such corpuscles into the rabbit. However, as this amboceptor will only operate in the presence of fresh complement, and this latter has already been fixed by combining with the syphilitic antigen and antibody of the patient's serum, hæmolysis will not occur.

In 1907 Weil and Braum found that the Wassermann reaction could be obtained with the extracts of normal liver used as antigen, but that it could be obtained only with syphilitic sera.

The same year a number of German scientists confirmed these observations and found that the antigen need not be of syphilitic origin so long as it is an extract containing the alcohol soluble substance —the lipoid—of an organ. The antigen powers of watery solution of syphilitic liver, alcoholic solution of normal liver, and solutions of pure lecithin were compared and found to be equally efficacious.

It is interesting to note at this point that Klausner in 1908 found that the globular contents in the blood serum of syphilitics is markedly increased as compared with that of normal sera.

Citron has suggested that the syphilitic antigen may be a complex consisting of some soluble product of a syphilitic virus present in the patient's serum plus lipoid substances as shown in Dr. Swift's diagram.

Whatever may be the true nature of the reaction, the fact that lipoids play a part in it throws some light on the nature of the disease, for it is true that lecithin is very abundant in nerve tissues, and the susceptibility of the central nervous system to the syphilitic virus is well known.

I have not the time to discuss the results obtained with the Wassermann reaction in cases of general paralysis, further than to state that a great deal of work has been done in these cases with the cerebrospinal fluids. J. H. Smith and J. P. Condler, of England, report that out of a series of 175 cerebrospinal fluids derived from 127 individuals, sixty-four were cases of general paralysis, and in fifty-nine of them a positive reaction was obtained. They report, 352 cases collected from the literature with 300 cerebrospinal fluids giving a positive reaction.

In France, Marie and Levanditi report ninety-three per cent. positive Wassermann reactions in thirty cases of general paralysis.

In ordinary syphilis the cerebrospinal fluid is generally negative, though the blood serum be strongly positive.

The presence of the antibody in the serum and spinal fluid of general paralysis, while adding another argument to the clinical evidence connecting this disease with syphilis, in no sense proves the ætiological relation incontestibly.

Having made a survey of the literature covering the work done by twenty-six investigators with the Wassermann reaction in syphilis, I have summarized the results as follows: In 2,809 cases, covering all stages of the disease, and including those which had received specific treatment, 84.2 per cent. gave a positive reaction. In 4,572 normal cases examined, only four reacted positively. In seven cases of chancre, all gave a positive reaction. Of twenty-seven cases of secondary syphilis, 97.5 per cent. reacted positively. Twelve cases of hereditary syphilis in children gave a positive reaction. One hundred per cent. of so called latent cases reacted positively.

All reports agree that the Wassermann reaction is not always present in the first stage of the disease, nor in cases which have received systematic and adequate treatment.

Citron has enunciated two laws as follows:

First. The longer the syphilitic virus has worked in the body, and the oftener it has caused recurrences, the more constant and stronger is the antibody content of the serum; second, the earlier the mercury treatment is started and the longer continued, the more frequently it is repeated, the more advantageous the method of application, and the shorter the interval since the last "cure," the less is the content of the antibody, and the more frequently is the reaction negative.

So long as the mercury is present in the blood, the reaction may be negative; so at least a month should elapse after treatment has ceased before making a test. The literature shows that about eighty-four per cent. of reactions are changed by treatment.

Wassermann has recently hinted at the possibility of a very interesting and important development of the subject, recalling the fact that the *Spirochæta pallida* is a protozoon, he thinks it probable that in all cases of protozoal infection there is a similar excessive production of lipoids in the organism. If this is so, and if an analogous reaction can be worked out in these diseases, it will be a useful aid to the diagnosis of trypanosomiasis, spirillosis, etc.

At present we may consider the test in the nature of an important symptom. It is of value in diagnosing syphilis from lupus, epithelioma, deeply seated tuberculous and malignant processes, and certain obscure dermatological affections, and cerebrospinal diseases. It may be made of inestimable value as a check on the treatment of syphilitic manifestations.

Only the complexity of the technique of the Wassermann reaction has prevented its introduction into general practice, and it was to place this most valuable aid to diagnosis within the reach of all physicians that Hideyo Noguchi brought forward his method, based upon the same principles as Wasser-

mann's. All that I have said regarding the Wassermann test applies to the Noguchi modification, save that in the latter method the technique has been so simplified that it is within the reach of any physician's laboratory.

The results are even more reliable than those of the Wassermann method, because in the latter we have a heterohæmolytic system; with the human serum, guinea pig serum, and sheep's corpuscles; while in the Noguchi we have a homohæmolytic system, thus eliminating one possible source of error which will be made clear when I describe the method.

I shall not at this time make a comparison of the technique of the two methods, but will refer you to Noguchi's original article in report No. 2 for 1909 of the laboratory of the Rockefeller Institute.

In my own experiments in the laboratory of the Emergency Hospital of this city, I have followed Noguchi's plan with a few modifications in the technique which suggested themselves to me as expedient. The proceeding is as follows: A rubber ligature is placed around the thumb of the patient. A stab wound is made behind the matrix of the nail with a pointed glass tube—a separate tube is used for each patient. The blood flows freely and is taken up in a glass capsule. I make a capsule which is easier to fill and more convenient with which to work than the Wright capsule. The method of making and using it is illustrated in the diagram.

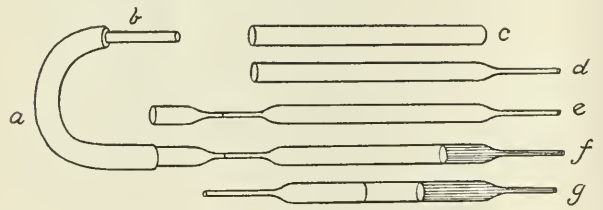

Fig. 8.—Glass tubes and capsule for taking the patient's serum; *a*, rubber tube; *b*, glass tube; *c*, glass tube; *d*, one end drawn out; *e*, finished capsule; *f*, for contact with patient's blood; *g*, filled capsule.

The required amount of blood is drawn into the body of the capsule by suction; the distal end sealed in the flame and the proximal end broken off. This is then set aside until the serum separates; the tube may be centrifugalized, in which case the clear serum will separate in three to five minutes. A file mark is then made on the body of the capsule and it is broken, thus forming a shallow cup.

Before beginning the reaction the following reagents must be ready: The antigen, consisting of alcoholic extract of normal liver; an amboceptor consisting of the serum of a rabbit whose blood has been rendered immune to human red corpuscles by repeated injections; a complement freshly prepared by bleeding a guinea pig and allowing the serum to separate and then taking up 1 c.c. of this clear serum and diluting it with 9 c.c. of normal salt solution: the suspension of blood corpuscles necessary is made by allowing one drop of normal blood to mix with 4 c.c. of normal salt solution.

Noguchi has found that accurate results can be obtained by drying the antigen and amboceptor on filter paper, and it is found that these papers are stable when kept under ordinary conditions. In my work I have used with uniform results the antigen and amboceptor papers prepared and standardized by the experts in charge of the laboratories of the H. K. Mulford Company, of Philadelphia. These strips of paper are tested before leaving the laboratories, and the amount of each strip necessary for a reaction marked on the package. Noguchi uses the antigen and the amboceptor in this form.

Having the patient's serum and the necessary reagents prepared, I take up the serum in a capillary tube by means of a small nipple, and put one drop of this into each of two test tubes. To this serum I add 1 c.c. of the suspension of corpuscles with .4 c.c. of the complement solution. Into one of each set of tubes is put a strip of antigen paper and the whole put into the incubator and kept at 37° C. for one hour. At the end of the hour a strip of amboceptor paper is added to all the tubes, and the mixtures incubated for two additional hours, at the end of which time the results are noted.

A negative reaction is indicated by complete hæmolysis in both tubes of each set—irrespective of the presence of the antigen. A positive reaction is shown by complete absence of, or a partial inhibition of, hæmolysis in the tube containing the antigen; and complete hæmolysis in the tube which does not contain the antigen. In a positive serum there may be no trace of hæmolysis even after eighty hours. In moderately positive cases there will be degrees of hæmolysis at the end of the second period of incubation.

In all tests a control set of tubes containing normal serum must be used, and complete hæmolysis must occur in both tubes of this set before the other tubes are read.

For the complete control of the reagents used in the examination of a case, the following combinations have been suggested by Doctor Hitchens, one set of controls being sufficient for a series of tests:

1	1″
Patient's serum, 1 drop.	Patient's serum, 1 drop.
Corpuscles in saline solution, 1 c.c.	Corpuscles in saline solution, 1 c.c.
Complement, 0.04 c.c.	Complement, 0.04 c.c.
Incubate for one hour at 37.5° C. then add:	
Amboceptor, 2 units.	Antigen, 1 unit. Amboceptor, 2 units.
Incubate for one hour, or until hæmolysis has taken place in 1-2-2″-3.	
Hæmolysis.	No hæmolysis, or hæmolysis depending on whether or not the patient is syphilitic.
Hæmolysis is a negative reaction. No hæmolysis positive reaction.	

2	2″
Normal serum, 1 drop.	Normal serum, 1 drop.
Corpuscles in saline solution, 1 c.c.	Corpuscles in saline solution. 1 c.c.
Complement, 0.04 c.c.	Complement, 0.04 c.c.
	Antigen, 1 unit.
Amboceptor, 2 units.	Amboceptor, 2 units.
Hæmolysis	Hæmolysis.

3	3″
Syphilitic serum, 1 drop.	Syphilitic serum, 1 drop.
Corpuscles in saline solution, 1 c.c.	Corpuscles in saline solution, 1 c.c.
Complement, 0.04 c.c.	Complement, 0 04 c.c.
	Antigen, 1 unit.
Amboceptor, 2 units.	Amboceptor, 2 units.
Hæmolysis.	No hæmolysis.

When the test tube containing normal healthy serum shows hæmolysis the reading should be taken from the other tube. These tubes may present various degrees of hæmolysis, and conclusions must be drawn from this as to the character of the reactions; for instance, it may be positive, less positive, slightly positive, or negative.

4	4″
Corpuscles in saline solution, 1 c.c.	Corpuscles in saline solution, 1 c.c.
Complement, 0.04 c.c.	
Amboceptor, 2 units.	
	Antigen, 1 unit.
Hæmolysis.	No hæmolysis.
Control of reagents.	Control of reagents.

5	5″
Corpuscles in saline solution, 1	Corpuscles in saline solution, 1 c.c.
Complement, 0.04 c.c.	Complement, 0.04 c.c.
	Amboceptor, 2 units.
Antigen, 1 unit.	Antigen, 1 unit.
No hæmolysis.	Hæmolysis.
Control of reagents.	Control of reagents.

Noguchi found that Wassermann's original method was subject to error arising from the presence in human serum of a varying amount of natural antisheep amboceptor which would hæmolize the sheep corpuscles used and prevent the detection of small amounts of syphilitic antibody. In Noguchi's method this source of error is eliminated because human corpuscles are used in combination with human serum, and so no foreign natural hæmolytic amboceptor is accidentally present.

Noguchi reports 465 specimens of blood examined by his method with 115 of these checked by the Wassermann method with the following results:

	No.	Wassermann.		Noguchi.	
		+	—	+	—
Primary cases	7	5	2	7	0
Manifest secondary	27	23	4	27	0
Latent secondary	12	6	6	9	3
Tertiary	18	17	1	17	1
Latent tertiary	18	11	7	14	4
Tabes dorsalis	11	3	8	11	0
Suspected	28	16	12	21	7

The cause of the observed difference in results was found by experiment to be due to the existence of a large amount of natural antisheep amboceptor in the patient's sera. No disagreement was found with strongly positive cases.

During the past two months I have made the Noguchi test with the blood sera of fifty-four patients and have obtained the following results:

Cases.	Positive.	Negative.
18 normal sera	0	18
1 primary chancre	1	0
9 secondary	9	0
9 tertiary	5	4
16 clinical suspects without specific histories.	7	9
1 nonspecific spinal fluid	0	1

(Fifteen of these cases were examined after this paper was read.)

These cases were selected for me by Dr. H. K. Craig in the dispensary of the Emergency Hospital; he has spared no effort in securing the clinical material which has made this series of experiments possible. The eighteen normal sera were from persons of clear, nonspecific histories, and all gave negative reactions. Four patients of the secondary cases were receiving treatment and gave very weak reactions, indicated by partial hæmolysis. The five patients who had received no treatment gave strong positive reactions. Of the nine tertiary cases, four patients had been taking mercurial treatment more or less regularly for about six months, and these gave negative reactions.

One of the tertiary cases which reacted in a strongly positive manner was a white male who had a deep ulcer of the chest. This had been variously diagnosticated as a tuberculous lesion, epithelioma, and gummata. Six weeks ago, the Noguchi test was made, after which the patient was given antisyphilitic treatment, with the result that at the present time the ulcer has almost entirely disappeared.

One of the suspected cases which gave a negative Noguchi reaction was a patient with what was apparently a specific arthritis of the wrist; but after a negative Noguchi report was made all antisyphilitic treatment was discontinued and the patient has since been progressively improving.

Dr. Craig's clinical records show that all patients whom I reported as giving a positive Noguchi reaction have steadily improved under specific treatment, and that those patients who were clinically suspected of being syphilitic, but who gave negative Noguchi reactions, have responded to general nonspecific treatment.

Some notion as to the tremendous field open for this work and its true place as a diagnostic agent may be best gathered from Noguchi's own findings, as shown in the following tables:

Noguchi system. Syphilis, parasyphilis, hereditary syphilis, and syphilis suspects.

	Cases examined.	Positive No.	+ Per cent.	—	±
Primary syphilis	70	65	92.8	4	1
Secondary syphilis	197	190	96.	5	2
Tertiary syphilis	177	159	89.9	16	2
Early latent syphilis	115	87	75.6	24	4
Late latent syphilis	150	119	79.3	27	4
Under prolonged treatment.	39	4	10.2	32	3
Cerebral syphilis	5	3	60.	1	1
Tabes	125	85	68.	27	13.
General paralysis	15	13	86.6	2	0
Hereditary syphilis	17	17	100.	0	0
Syphilis (?)	172	60	34.8	96	16
	1082	802		234	46.

Noguchi system. Cases in which syphilis can be excluded with a fair degree of certainty.

	Cases examined.	+	—	±
Leprosy	10	7	2	1
Carcinoma	51	1	48	2
Sarcoma	3	0	3	0
Adenosarcoma	1	0	1	0
Endothelioma	1	1	0	0
Scarlatina	63	1	60	2
Varicella	1	0	1	0
Measles	2	0	2	0
Tuberculosis	52	0	52	0
Lupus	2	0	2	0
Banti's disease	1	1	0	0
Hodgkin's disease	2	0	2	0
Muscular distrophy	5	1	3	1
Neurasthenia	2	0	1	1
Dementia præcox	5	0	5	0
Various skin diseases	58	0	57	1
Miscellaneous	74	0	74	0
	333	12	313	8.

Noguchi system. Cases in which syphilis is an ætiological factor or cannot be excluded as a possible cause of the condition.

	Cases. examined.	+	—	±
Cirrhosis of liver	7	5	1	1
Ascitic fluids	21	11	9	0
Aortic insufficiency	1	1	0	0
Chronic arthritis	10	2	6	2
Eye cases	29	14	15	0
Diabetes	5	1	4	0
Eczema	32	1	31	0
Sclerodoma	4	1	3	0
Brain tumor (?)	8	4	4	0
Central gliosis	2	1	1	0
Hemiplegia	8	3	5	0
Spastic paraplegia	3	2	0	1
Raynaud's disease	2	0	2	0
	132	46	81	4.

Noguchi system. Cases of eye disease.	Cases examined.	+	—	±
Keratitis interstialis	12	8	4	0
Iritis	6	4	2	0
Scleritis	1	0	1	0
Paralysis external rectus	1	0	1	0
Optic neuritis	1	1	0	0
Chorioiditis exudate	1	0	1	0
Optic atrophy	5	0	5	0
Acromegaly with ocular symptoms	2	1	1	0
	29	14	15	0.

In giving this paper it has been my desire to make clear the principles of the Noguchi reaction and to present the technique and results in such manner that the general practitioner would realize the importance of this most valuable aid in the diagnosis and treatment of syphilis.

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Noguchi's findings as here tabulated are taken from his book on *Serum Diagnosis of Syphilis,* J. B. Lippincott & Co.

Emergency Hospital.

THE TUBERCULIN TREATMENT OF PULMONARY TUBERCULOSIS IN OFFICE AND DISPENSARY PRACTICE.*

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Present medical opinion in regard to the use of tuberculin may be roughly divided into three categories.

In the first are those who are still influenced by the early antipathy to tuberculin, caused by its misuse and fostered by the denunciation of Virchow. These men believe tuberculin to be too injurious an agent for medical use.

In the second group are those who see in its striking and easily demonstrated effects on the tuberculous individual a short cut to diagnosis and treatment which will spare the necessity for the more laborious and painstaking methods.

And lastly, we have those who believe strongly in the value of tuberculin, but have come to realize its limitations, so that it is welcomed simply as one more valuable aid to be used in careful conjunction with all other known and accepted methods for the diagnosis and treatment of tuberculosis.

Almost without exception, those who have had extensive practical experience with tuberculin for treatment are now included in this last category. In consequence, tuberculin is now being used very widely, but the majority of reports have come from sanatoria, so that the value of this method of treatment in office and dispensary practice is not yet generally appreciated.

Undoubtedly, it is preferable to have cases of pulmonary tuberculosis under strict supervision, and it is advisable for any one to gain his first experience with tuberculin from patients in institutions where they can be carefully watched and studied. There are, however, no insurmountable obstacles to the employment of tuberculin therapy in the class of ambulatory patients here under consideration. This class constitutes by far the vast majority of all cases of tuberculosis, and consequently any method of treatment which can be advantageously applied to these cases has immediately a very wide sphere of usefulness.

Already good results have been reported with dispensary patients, among others, notably by Hammer, Denys, and Raw in Europe, and in this country by Hawes and Floyd, in Boston, and Hamman and Wolman, in Baltimore. Their experience agrees with our own in New York, that the results of tuberculin treatment are most encouraging, and that they can be obtained in a dispensary as well as in a sanatorium.

Rationale of Tuberculin Therapeutics.—It has been conclusively demonstrated that tuberculin does not produce an immunity to tuberculosis either clinically or experimentally. The claim for its specific action in tuberculosis is based upon the following clinical phenomena:

1. It produces a specific hyperæmia at the site of the lesion which has distinct therapeutic value by stimulating both local resistance and the production of antibodies.

2. It causes a specific response in some of the vital reactions of the body which are closely associated with true immunity, *e. g.,* opsonins, agglutinins, precipitins.

3. It establishes a toxine tolerance which is also, perhaps, a real toxic immunity.

Upon the first phenomenon of local reaction, Koch based his original ideas of treatment but by large dosage carried it to such an extreme that great harm resulted and the method soon fell into deserved disrepute. With the small doses now given, this factor of slight local reaction is undoubtedly very important.

Wright, in his work, has made use of the second

*Read at the Congress of American Physicians and Surgeons, Washington, D. C., May 3 to 5, 1910, before a joint session of American Climatological, Laryngological, and Otological Associations.

phenomenon, *i. e.*, change in the opsonic index as a basis of treatment. In pulmonary tuberculosis this has proved unreliable and unsatisfactory.

The third phenomenon of toxine tolerance is the one upon which the so called "clinical method" of treatment has been based, and it is this method with minor variations which is at present generally employed.

The Method of Toxine Tolerance.—For many years a few far sighted clinicians have recognized that in Koch's discredited cure there lurked a valuable adjunct to the treatment of tuberculosis. The careful clinical observations of these men, Trudeau, Möller. Petruschky. Loewenstein, Denys, Spengler. and others, gradually developed what may be designated the method of tuberculin tolerance.

This method may be defined as the gradual habituation of a patient to the hypodermic administration of increasing doses of tuberculin, beginning with an amount easily tolerated and proceeding over a long period of time to large doses, without the producton of any marked constitutional reactions.

Opinions differ concerning minor features of this method, as to the size of the beginning and final doses, the rapidity of increase, the duration and continuity of treatment, the significance of mild reactions, etc., but in the essential principles there is now a general agreement, and in the other details observers are gradually coming nearer to meeting upon common ground.

Selection of Tuberculin.—The active principle, the method of action, and the efficacy of all the various preparations of tuberculin are practically the same. Koch's old tuberculin, (O. T.), is the standard and is probably quite as efficient as any of its modifications. Bacillus emulsion, (B. E.) and Koch's new tuberculin, (T. R.) are theoretically better vaccines. They are, however, apt to produce unexpected reactions and clinically produce no better results than the filtered preparations. *Bouillon filtré*, (B. F.), theoretically is preferable because unaltered by heat. Practically its only advantage appears to be its somewhat easier tolerance in excessively sensitive individuals. The assertion that bovine tuberculin is preferable in many cases, rests upon insufficient evidence, and the fact that the human type of bacillus is recovered from almost all cases of pulmonary tuberculosis in adults, deprives the arguments raised in its favor of much weight in the cases which are here considered.

There are many other modifications of tuberculin, none of which have become widely used, nor have they shown any superiority to the few already mentioned.

Selection of Cases.—Tuberculin should as a rule be used for treatment in pulmonary tuberculosis only in such patients who have no rise in temperature and are in good physical condition.

Inasmuch as success depends upon a reaction of the tissues of the body to the stimulus of the toxine introduced, if these tissues are not capable of such response, as in very acutely active or very far advanced cases, harm rather than good is usually the result.

In certain selected cases under strict supervision and after a large experience have been acquired, febrile cases may sometimes be treated to advantage, but they are exceptional. Such patients should of course never be treated in office or dispensary practice.

Incipient and moderately advanced cases of course do better under this than any other known method of treatment; nevertheless, the most striking favorable results are obtained in cases of long standing where the patients have drifted along into chronic invalidism with perhaps only occasional evidences of active symptoms but with a slowly progressive extension of the lesion and increasing constitutional impairment. The cases with which I have had personally to do are largely of this class.

Incipient cases I have always sent to sanatoria or health resorts if possible, and I have never felt justified in advising any patients in early, favorable cases for whom sanatorium treatment was available to remain in New York in order that they might receive the tuberculin treatment. When patients in such incipient cases do stay in town for one reason or another, they of course do better under the tuberculin than do the more advanced cases under similar conditions. On the other hand, it is interesting to note that not a few of my patients have been those who have tried climatic treatment for years without arrest of their disease, and having come home to gradually drift downward to the apparently inevitable final result, have made remarkable improvement under the use of tuberculin, and in many cases have been able to resume their ordinary occupations.

Accessory Methods of Treatment.—The ordinary methods of the hygienic dietetic treatment of the disease must never be neglected in cases treated with tuberculin. In dispensary and office practice in a large city this is by no means easy, and this portion of the treatment is very seldom as satisfactory or complete as could be desired. For this reason, however, the effect of the tuberculin as distinguished from that of the environment can be more clearly determined than is possible in sanatoria.

Almost invariably it is my custom to give each patient before beginning the tuberculin a preliminary course of absolute rest, combined with as much good air and good food as is feasible. Sometimes this has been in the country near New York, but usually in the city itself. This preliminary rest is important in order to enhance the general resisting powers of the patient, and thus favor a proper response to the process of active immunization.

During the earlier part of the treatment also, rest is still a large factor, but gradually more exercise is allowed, according to the individual indications, and not a few of my patients have worked regularly at their usual occupations during the greater portion of the course. Any unusual exertion or strain is prohibited for twenty-four hours after each injection, but absolute rest at these times is not essential.

Private patients have usually lived in the suburbs, where conditions are more conducive to the open air life, and have come in for treatment twice a week. No harm has resulted from these trips, and on account of their better surroundings these patients have, as a rule, done better than those in the dispensary. In a few instances local physicians have given the injections under my general super-

vision, the patient reporting to me only once in every two weeks or thereabouts.

Some private patients and all of those in the dispensary have lived in New York continuously. For the latter, the visiting nurse, aided when necessary by charitable societies, has done as much as possible to rearrange the tenement home in the best interests of the patient. Nothing more has been done, however, for the tuberculin treated patients than for the other patients under the care of the dispensary.

The day camp has been of considerable benefit by affording favorable conditions during the day for not a few of the dispensary patients. A few of them have also attended the night camp, thus having opportunity for sleeping in the open air.

Very few drugs have been given, and these only occasionally for the relief of special symptoms.

Technique.—The injections have been given as a general rule twice weekly until high doses are reached, when the interval is lengthened. They are given subcutaneously in the interscapular region with the ordinary precautions for a hypodermic injection. No cases of infection have occurred.

The dilutions are made with a one-fourth per cent. carbolic solutions and are renewed at least every ten days. It is a distinct advantage for the administrator to make his own dilutions. It is a comparatively simple procedure, and familiarity with it gives one a better knowledge of the agent that he is using. It also fixes responsibility for exact accuracy and avoids needless delay.

The patient records his temperature and pulse three times daily and is warned of the symptoms of reaction for which he must watch. In some cases tuberculin record books have been used, but often the catalogue of possibilities spread before him has rendered the patient too introspective, and in dispensary patients few have the necessary intelligence for accurate observation, so that the use of these books has been the exception rather than the rule.

In these cases even more care must be taken to note the effects of the previous injection than in cases under closer supervision. Careful questioning of the patient, together with the temperature record and examination of the site of injection, have given us satisfactory information, but in case of doubt no chances of reaction are ever taken, and the dosage is either repeated or omitted altogether.

Dosage.—The clinical method of gaining tuberculin tolerance without constitutional reaction is the usual one employed and the only one with which I have had much practical experience.

Two different schemes of dosage are widely employed. The first, advocated by Möller, Loewenstein, and others in Germany, begins with from 0.00001 to 0.0001 gramme of O. T. or B. F. and increases rapidly, often by doubling the dose, very soon reaching high dosage. The second, recommended by Trudeau, Denys and Sahli, begins with from 0.00000001 to 0.0000001 gramme, and proceeds much more slowly by fractional increases on a modified decimal system. For a general scheme, the latter is undoubtedly the better and safer method. Reactions very seldom occur and no harm can be done, while the results are very satisfactory. By the first method reactions occur frequently, and in unskilled hands intolerance to tuberculin can easily result.

Nevertheless, it is our experience that patients who take kindly to this higher and more rapid dosage improve more rapidly and perceptibly than do patients with similar cases by the other method. Moreover, by the lower scheme some patients appear to be unaffected as though the dosage was too far below their degree of tolerance. Consequently, as soon as experience with tuberculin has been gained, advantage results from careful individualization in the dosage for each patient, the object being to keep very close to the limit of tolerance and still not cause reactions.

In a general way, the Trudeau-Denys scheme may be regarded as the lowest to be used, and the Möller-Loewenstein scheme as the highest. Best results are obtained by skillful individual variation of dosage between these two extremes.

The maximum end dose to be attained is also a question of individual requirement. In a general way, 1.0 gramme may be considered the maximum dose ever to be employed, but in many cases this can never be reached, because of tuberculin intolerance. In these cases quite as good clinical results ensue from a very slow progression of dosage up to 10 mg., 1 mg., or even 0.1 mg., as the case may be.

White recommends a method of determining the proper dose for each individual by a determination of the amount of tuberculin required to give a cutaneous reaction by the von Pirquet method. I have had no experience with this method, which is ingenious, but appears open to sources of error from individual variations in the absorption of tuberculin through a skin abrasion.

In using B. E., it has become my custom to reckon the dosage by volume just as is done in the filtered preparations, 1 c.c. of the emulsion being considered equal to 1.0 gramme of O. T. or B. F., and upon this basis the same dosage as that already described for these latter preparations being employed.

The amount of solid substance can, of course, be readily reckoned from this, but I am convinced that the usual beginning dose of from 0.0000001 to 0.000001 gramme of solid substance is much too high and partly accounts for the more frequent reactions caused by this preparation. By the volumetric method the beginning dose is only 0.000000005 gramme of solid substance.

Guides to Dosage.—The underlying principle should always be to avoid every constitutional reaction, however slight, to the increasing doses of tuberculin.

Too great emphasis cannot be placed upon the importance of watching closely for slight evidences of intolerance to tuberculin, as shown by malaise, loss of appetite, headache, moderate loss of weight, etc., even when no febrile reaction has been produced.

Increased cough and expectoration, pains in the chest, and even slight hæmoptyses are evidences of a focal reaction in the lungs, and must necessarily be considered carefully. I do not feel, however, that such reactions, if slight, show the same tendency to intolerance as do the slight constitutional

reactions, and it has often seemed as though a very slight focal reaction was beneficial. We are here treading, however, on very delicate ground, and the exercise of additional care is necessary in these cases for, of course, any considerable focal reaction is not only undesirable but may even be dangerous.

The local reaction at the point of injection should also be carefully considered, there usually being no disturbance beyond a slight sensitiveness for a few hours. The appearance of local pain, redness, or swelling is an excellent indication of an approach to the limit of tolerance, and should be so considered in estimating the proper progression of dosage.

Patients with any tendency to constitutional reaction are given a rest from the treatment for several days or more, and then either the same dose repeated, or some fraction even as far down as 0.1 of the preceding dose given, depending entirely upon the severity and the duration of the reaction that has been produced.

In a general way a mild constitutional reaction protracted over several days is more serious than a sharper reaction, which quickly disappears. A new injection should never be given until all signs of reaction have been absent for several days.

The opsonic index as a guide to dosage, as advocated by Wright, is largely used in England. This is the most scientific guide to dosage that has been proposed, but practically it has proved unreliable, especially so in pulmonary tuberculosis, and its use has been generally discarded. Other proposed guides, such as the agglutination test and the differential neutrophile blood count of Arneth have not proved to be of value.

Duration of Treatment.—No results of any permanent value can be obtained unless the tuberculin is continued for a long time, at least six months. Very little beneficial effect is noted before two or three months, and this is not permanent unless followed up. The desirable length of treatment will probably average eight or nine months, and not a few individual cases require a year or even eighteen months. This is a great disadvantage as it is always difficult and often impossible, to keep patients under regular observation so long. This is particularly true in the patients who do well and consequently do not realize the importance of further treatment, and in the dispensary cases, even though the visiting nurses do their best to follow up the patients in their homes.

Repeated Courses.—In many cases, especially those of the chronic advanced type, more than one course of tuberculin treatment is advisable. The secondary courses are shorter than the first, and the doses increased much more rapidly. The necessity for a second course is determined largely by the clinical symptoms. A return of the evidences of toxæmia is the most valuable indication. A return of response to the cutaneous test may also be of value when considered in conjunction with the clinical evidence.

Results.—The chief beneficial results from the use of tuberculin are the disappearance of toxic symptoms and the greater permanency of the regained good health. There is also some evidence to show that tubercle bacilli disappear from the sputum more frequently in tuberculin treated cases, but the direct influence upon the pulmonary lesions as indicated by physical signs, is not striking, indeed is often not appreciable. On advanced cases the improved conditions are most marked, and to note the frequent return to normal methods of living in patients who have been chronic invalids for years is a most gratifying experience. The stability of results is especially striking in dispensary patients. In spite of untoward environment, relapses are comparatively infrequent after tuberculin treatment and the ability to withstand the stress and strain of life is often very surprising.

In a chronic disease dependent upon so many varying factors, the value of statistics is open to question. Nevertheless, enough statistical evidence concerning tuberculin has now accumulated to lend substantial support to clinical impressions of the value of this method of treatment in outpatient practice.

Denys, in 442 cases of all stages, the majority of which were extramural patients, reports an apparent cure in fifty-six per cent. and an improvement in seventy-one per cent.

Hammer, without giving any figures, states that he uses tuberculin for treatment at the Heidelberg Medical Policlinic on practically all patients, most of whom belong to the laboring classes, and that his results are excellent and advises its general use in dispensary practice.

Hawes and Floyd, in forty-six cases of pulmonary tuberculosis treated in the dispensary, report thirty-two arrested, seven improved, and seven unimproved. Compared with patients under similar conditions not treated with tuberculin, they state the difference in results obtained were that the tuberculin treated cases after arrest did not relapse as soon as the untreated cases.

Hamman and Wolman, in fifty-seven dispensary cases of pulmonary tuberculosis of all stages treated with tuberculin at least ninety days, found ten patients apparently cured, sixteen arrested, twelve improved, and nineteen progressive.

In my own experience in New York, out of 212 cases treated with tuberculin in office and dispensary practice, only 70 patients continued under treatment ninety days or more. In these seventy cases the following results were obtained: Apparently cured, sixteen, 22.8 per cent.; arrested, twenty, 28.6 per cent.; improved, sixteen, 22.8 per cent.; progressive, eighteen, 25.7 per cent.

Present Condition: Well in active life, 28, 40 per cent; feel well, still under treatment, 13, 18.5 per cent.; total, 58.5 per cent.; not doing well, 6, 8.5 per cent.; dead, 10, 14.3 per cent.; untraced, 13, 18.5 per cent.

Stage of Disease: Incipient, 9, 12.8 per cent.; moderately advanced, 42, 60 per cent.; far advanced, 19, 27.2 per cent.; 87.2 per cent.

Duration of Treatment: Five months at least, 49; nine months at least, 15; twelve months at least, 6. Patients working while under treatment, eight.

RELATION OF STAGE TO RESULTS:

	Apparently cured.	Arrested.	Improved.	Progressive.	Total.
Incipient	7	1	1	0	9
Moderately advanced	8	16	12	6	42
Far advanced	1	3	3	12	19
	16	20	16	18	70

Particular attention is called to the fact that al-

though 87.2 per cent. were advanced or far advanced cases, 51.4 per cent. were apparently cured or arrested. That eight patients worked regularly during the course of treatment, and that although these patients here reported have been treated over a period of five years, yet at the present time 58.5 per cent. are known to be well and forty per cent. having finished their treatment are now well and leading active lives.

Summary.—The present position of tuberculin therapy may be summarized as follows:

1. Tuberculin is a valuable addition to our means of treating pulmonary tuberculosis, its effects being best evidenced by a greater permanence of good results, a larger proportion of cases which lose bacilli from their sputum, and the relief from toxic symptoms, especially in chronic advanced cases.

2. Tuberculin can do no harm when given carefully in proper dosage.

3. No one of the more ordinary preparations of tuberculin possesses any material advantage over the others.

4. The so called clinical method is the most practicable guide for the administration of tuberculin in pulmonary tuberculosis, and the aim should be to produce no general reactions.

5. The time element in treatment is more important than the absolute dosage, the latter varying with every case and the former being never less than six and often more than eighteen months.

6. With unimportant modifications this method of treatment is quite as applicable to dispensary and office patients as to those in sanatoria.

18 West Fifty-first Street.

VACCINE THERAPY IN TUBERCULOSIS.*

(In Institutional Practice.)

By Herbert Maxon King, M. D.,
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For the present vaccine treatment in tuberculosis consists in, 1, the treatment of the tuberculous infection itself by some one or more of the tuberculins; and, 2, the treatment of the secondary pyogenic infection by the specific bacterial product indicated by the character of the secondary infection.

Owing to the time and difficulty involved in the preparation of autogenous tuberculins, these are not generally employed, and especially since it has been shown that there is no special advantage in their use. On the other hand, the comparative ease of preparation and standardization of autogenous bacterial vaccines, to meet the requirements of the usual secondary infections, is such that these are in much more common use, especially in sanatorium practice where convenient laboratory facilities are at hand.

The principles involved in this form of specific treatment are, of course, the same, whether employed in the sanatorium, in the dispensary, or in private practice. The same questions arise as to the choice of tuberculin; the selection of the patient; the dose, progression and interval, and the indications for interrupting or terminating the treatment.

Nevertheless since, for obvious reasons, the sanatorium offers certain advantages to the satisfactory employment of a therapeutic measure which, like tuberculin treatment, involves a long period of time and a close observation of the patient, the use of tuberculin and its accessory bacterial vaccines can be considered somewhat differently in sanatorium practice and dispensary or private practice.

TUBERCULIN TREATMENT IN THE SANATORIUM:

Selection of Patients.—At the Loomis Sanatorium two classes of patients are advised to take tuberculin, viz.: 1. The class of incipient cases which have been under observation for a sufficiently long time to justify the belief that they are not progressive and are without fever or other evidences of a marked general toxæmia, and, 2, that class of more advanced cases, presenting evidence of "arrested" activity, the patients having been for some time without material change in their condition—either local or constitutional—but who still have cough and a bacillary sputum.

In a few instances we have given tuberculin, in extremely minute doses, in progressive febrile cases —more with a view of gratifying the whim of a very sick patient than with any expectation of success in treatment—and our results in such cases have always been negative.

The use of tuberculin in special cases and the selection of patients depend upon one's conception of the action of tuberculin.

The one demonstrable and constant result of the suitable use of tuberculin is—tuberculin immunity —whatever else tuberculin may or may not accomplish. I think the majority who have had any considerable experience agree on this point. With us this is the first consideration and the line of pursuit throughout the whole course of treatment.

Realizing that tuberculin immunity is not immunity to tuberculosis we, nevertheless, have come to feel that something more is at the same time accomplished in most cases during a well borne course of tuberculin, and that additional protection is afforded the patient against his disease—both in the form of present resistance and against future tendency to relapse.

Of the theories so far advanced to explain the beneficial effects of tuberculin, other than those attending tuberculin immunity, none is wholly satisfactory—but that in some way general improvement and increased resistance follow its use in suitable cases is more and more felt to be a fact by those who employ tuberculin therapeutically.

While the same general considerations will determine the individual suitability for specific treatment in tuberculosis, the better opportunities for observation and control of the patient in the sanatorium permit of a somewhat more inclusive selection of patients here than it is wise to make in dispensary or office practice. Otherwise, the indications and contraindications are, of course, the same.

Choice of Tuberculin.—This seems to be a matter rather of arbitrary preference on the part of the physician than of distinct or peculiar advantage on the part of any particular tuberculin. Theoretically

*Being part of the "symposium" on the subject of "Vaccine Therapy" at the recent Congress of American Physicians and Surgeons, held in Washington, May 4, 1910.

one must agree that a suspension of B. E. in B. F. comes nearest to the ideal, but as a matter of fact the same results seem to follow the appropriate use of almost any of the many varieties. At Loomis Sanatorium we are in the habit of using bacillus emulsion and *bouillon filtré*—the former chiefly, the latter more rarely and in some cases combining the two. As is well known, bacillus emulsion has the disadvantage of producing at times, and without premonition, rather disagreeable reactions, and requires perhaps more care in dilution than do some other varieties. These disadvantages notwithstanding, our preference has been for bacillus emulsion in most cases, and yet without any very logical reason for the choice.

Dose and Interval.—In accordance with the idea that beginning with a small dose and progressing steadily, but not too rapidly, tuberculin immunity can be attained most surely and with least danger of unpleasant reactions, we are accustomed to proceed from the initial dose, in logarithmic scale, on the plan devised by Brown and Pope.

While, of course, there are many individual exceptions, based on peculiar features of certain cases, as a routine practice we begin with 0.00000001 gramme (solid substance) bacillus emulsion and 0.0000001 c.c. *bouillon filtré* and proceed by fifty per cent. increases until 0.0001 gramme or 0.00001 gramme in the case of bacillus emulsion, and somewhat larger doses in the case of *bouillon filtré*, are reached: afterward proceeding at the rate of twenty per cent. increases until the maximum dose or the termination of the course is reached. However, should intolerance for an increased dose develop at any time during the treatment, this plan of progression may be wholly changed.

At one time it was our endeavor to reach a maximum dose of 0.005 gramme (solid substance) bacillus emulsion (we were not then using *bouillon filtré*) in every case and to achieve immunity to the ophthalmic reaction or to 0.005 old tuberculin. But this arbitrary plan was long ago abandoned and no effort is now made to reach a definite maximum dose. In fact at the end of a course of from seven to nine months, it is rarely that we ever exceed a maximum of 0.001 gramme bacillus emulsion and 0.1 to 0.5 c.c. *bouillon filtré*.

In supplementary courses of treatment given at intervals of from several months to a year after the termination of the preceding course, it is our custom to begin with a considerably increased initial dose, depending upon the individual's toleration during the previous course, and progress much more rapidly unless checked by symptoms. Recently we have, in a few such cases, proceeded for the first few doses at the rate of 1,000 per cent. increases, when we have had reason to believe that immunity was high, but such a plan is not a wise one to put into general practice.

While during the earlier period of the treatment it is no doubt safe to give tuberculin twice weekly, it has seemed to us wise to lengthen the interval to one week as a rule when 0.00001 gramme is reached. We have been influenced in this regard by the observations of Kinghorn and Twichell on the opsonic index variations following tuberculin administration, and by our own observations along the same line from which it would seem that the blood disturbance caused by tuberculin in any considerable dose does not subside under five or six days. We have experienced fewer reactions since we have followed this plan.

There can be no doubt that individualization in treatment is quite as important in tuberculin therapy as in other fields of therapeutics, and the best success will attend him who most carefully individualizes and studies his patient both prior to beginning and during the whole course of the treatment.

At Loomis Sanatorium we endeavored for a long time to utilize the opsonic index as a guide to tuberculin administration, but abandoned the method when we became convinced that it was impracticable for this purpose.

Reactions.—In the sanatorium where such a procedure is practicable we make it a practice to enjoin *comparative* rest on the day of the injection, and more *strict* rest for thirty-six hours afterward (we usually give tuberculin in the late afternoon). In this way, no doubt, reactions are in a large measure avoided, and when they occur are more mild, as autoinoculations are thus prevented. In dispensary and office practice such a plan is less practicable.

There can be little doubt that general reactions are, to say the least, undesirable. To just what extent organ reactions are devoid of danger, or actually advantageous, is still a matter of question. In young persons when the superficial lymphatics present the only demonstrable foci of infection, a reaction characterized by some swelling and tenderness in the infected glands is almost always followed by a distinct improvement.

In a case of extensive laryngeal and pulmonary involvement a course of tuberculin extending over a period of some eighteen months, and reaching a maximum dose of 0.005 gramme (solid substance) bacillus emulsion several times repeated, presented a general reaction only once during the course, yet very frequently when the larger doses were reached gave a focal reaction in the larynx, which was invariably followed by marked improvement in the laryngeal lesion, and finally resulted in an apparently complete cure of this lesion. In fact the most spectacular results are often observed in laryngeal lesions following tuberculin treatment where focal —not general—reactions are frequent.

One case of this sort, presenting some unusual features, may be cited as showing the advantages, as well as the dangers, of sharp focal reactions in the larynx:

A man, thirty-one years of age, with an extensive quiescent ("arrested") pulmonary involvement and an extensive destructive disease of the larynx, in which infiltration and ulceration had so distorted the parts as to make it impossible to definitely locate the usual land marks, entered upon a course of tuberculin (bacillus emulsion). The initial dose was 0.00000001 gramme (solid substance). The increase was at the rate of fifty per cent., and owing to the extent and character of the lesion, the interval was one week. Following the dose of 0.00000022 gramme, which, it should be observed, was given during a slight exacerbation of the laryngeal symptoms, there occurred a most violent organ reaction in the larynx. There were no constitutional symptoms and no evidence of any change in the pulmonary condition, but swelling and œdema in the larynx lasting some forty-eight hours, and causing a most distressing dyspnœa, made it a matter of grave question whether to intubate or perform a tracheotomy. The more

distressing symptoms subsiding, however, neither was done, and the patient made a quick recovery from the reaction —a most rapid and marvelous improvement in the laryngeal lesion followed, and in a remarkably short time the larynx was apparently free from disease, and the voice was almost completely restored.

There are three striking and, in our experience, unique points in this case: (a) The remarkably small dose of tuberculin which caused the reaction; (b) the violence of the focal reaction, limited as it evidently was to the laryngeal lesion, in the absence of any demonstrable general reaction; and (c) the prompt recovery following the reaction.

The more common laryngeal lesions do not contraindicate the employment of tuberculin, but in those cases in which an old fibroid infiltration has already appreciably narrowed the glottis, a focal reaction may undoubtedly cause a sudden and very alarming stenosis, and such a lesion, in our opinion, contraindicates tuberculin treatment.

TREATMENT OF SECONDARY PYOGENIC INFECTIONS BY AUTOGENOUS VACCINES:

Selection of Patients.—Usually, though not always, these are cavity cases with persistent high fever, which does not yield to complete rest in bed. So far we have limited the selection to hospital patients, where constant observation and control are possible.

Procedure.—The washed morning sputum is plated and different colonies subsequently transplanted in the usual way. For the purpose of determining, as far as possible, which organism is chiefly responsible for the symptoms, we still believe that the opsonic index determinations are of great value.

A series of observations are, therefore, made of the temperature, and the blood taken simultaneously at intervals of three or four hours over a period of twenty-four hours, or at longer intervals extending over several days. The more abundant secondary organisms, of which there are usually but one or two varieties, are carried through with the tubercle bacillus (from a stock emulsion) and that organism, which gives the most typical "diamond curve," with the temperature curve, is selected as the most probable chief source of the secondary infection.

An emulsion is then made from a growth of this organism—sterilized at 60° C.—and standardized by counting with erythrocytes from a source of known value. It is then ready for use.

Dose and Interval.—An initial dose of such vaccines as we have used at the Loomis Sanatorium for this purpose, is from twenty to forty million, which, if no contraindications arise, is first repeated and then increased at the rate of 100 per cent. until from one hundred to two hundred million is given at intervals of from two to ten days, according to circumstances.

The attempt is made to time the doses at the fall of the patient's temperature.

We have observed no untoward effects from such treatment. We have never found that subsequent temperatures are any higher following an injection.

Occasionally a vaccine is apparently inert, probably due to error in technique on our part or to mistake in identifying the cause of the infection.

In the majority of cases in which we have used such vaccines, we think we can trace a relation between the treatment and a remission in the symptoms, chiefly in lowered temperature. However, our experience has so far been too limited to permit of any very positive statement as to the value of the methods which we have employed, or for that matter in the practicability of this method of treating the complicating pyogenic infections in pulmonary tuberculosis at all.

The most that can be said is that the plan seems reasonable and that, so far at least, our results seem to justify effort in this direction.

THE LACRIMAL DUCT AS A PORTAL OF INFECTION IN BLENNORRHŒA NEONATORUM, AND ITS PREVENTION.*

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From the beginning, man has run the gauntlet of infection while passing through the parturient canal, and even to-day he is still subjected to this source of danger and will be so long as germs exist. Although this subject has been written threadbare it is necessary to review it, and see if there is any method by which the remaining chances of infection can be further reduced, and if so it should be made known to the obstetrician who sees these cases earlier than the ophthalmologist.

If we cannot eradicate the origin of biennorrhæa neonatorum we, nevertheless, can by various methods produce a more or less fœtal immunity, which we must do in the full sense of the word, for twenty per cent. of the blind have been made so by improper treatment at birth.

Credé reduced the chances of infection from 10.8 per cent. to 0.2 per cent. by instilling silver nitrate into the eyes of the new born. Later modern obstetrical cleanliness reduced these chances of infection still further, and to-day we find physicians who do not advocate the general use of silver nitrate, and some who have abandoned it entirely. I do not feel as yet competent to say whether the instillation of silver nitrate in the eyes of the new born is necessarily the only essential preventative of neonatal infections, but I feel like the Scotchman who said he believed it, only "he ha his doots," for we have other antiseptics just as powerful that do not coagulate albumin, nor irritate the conjunctiva. Each of you must decide this question for himself, but please remember while you are doing so that silver nitrate does set up an irritation which may be the forerunner of a post partum infection which is in no way connected with birth, and can be mistaken for a maternal inoculation, for D. S. Reynolds reports that a purulent conjunctivitis developed in "nearly every child born in the maternity wards of his city in January, 1901, until the Credé method was abandoned and then new cases appeared."

Blennorrhœa neonatorum is described under two general heads, ante partum and post partum, and they differ only in their mode of onset, for they have similar symptoms which have been described and

*Read before the Buffalo Academy of Medicine, March 23, 1909.

familiarized by every one for centuries past, and here need no further description.

The rarity of the ante partum form is usually considered a blessing, but it should be looked upon in many cases as a misfortune, for, if the intrauterine inoculation is not too long before birth, there is still sufficient time to save the eye, while in the post partum form many eyes are lost, due to a delayed diagnosis, owing to the early discharge of the accoucher. This is, of course, only in the poorer class of patients.

Ophthalmia neonatorum usually develops in three or four days after birth, but there are on record thirty-five cases by Stevenson and Ford which developed in twenty-four hours after birth, which, they believe, must have been an intrauterine infection, because Belloward in curing pannus with blennorrhagic pus did not obtain the first symptoms until from two and a half to three days from the time of inoculation. Nieden relates a case of an infant born in the amniotic membranes in which gonorrhœal ophthalmia developed in twenty-four hours. Ford records the case of an infant born after eight hour labor in a multipura with no previous history of a vaginal discharge in which the lids and conjunctiva were noticed swollen, and upon separating the lids there was found a straw colored discharge. W. O. Nance, of Chicago, reports a case of a child born with pus oozing from the left eye. There was a history of a vaginal discharge in the mother several months before she gave birth. There is another case on record which shows that the eyes were found infected and filled with pus when taking the child from the abdominal wound in a Cæsarean section. These cases then show that we should take great care in protecting pregnant women from infection which may be induced at the time of coition.

The most essential step in the prevention of disease is to understand, first, the origin of the disease, and know, second, by what paths it travels. The former fact is well known, but the latter is more difficult to comprehend unless we reconsider labor and the anatomical parts surrounding the eye. When the fœtus starts downward through the parturient canal, the eyes in the post partum form are uninfected. The amniotic sac affords protection during descent, but when it ruptures the eyes become exposed to infection owing to a separation of the eyelids, that is, providing the dragging of the vaginal membranes across a slippery surface, such as the face, is sufficient to force them apart, if it is not and they do not open voluntarily then infection must enter the eye in some other way.

The minimum proportion of infected fœtal eyes is caused by direct germ contact, and the maximum amount of infection travels indirectly by way of the nose, a cavity which remains open and would naturally become filled, at the time of the rotary motion of the head through the pelvis, with septic material which is drawn further back by the first breath filling all nasal openings with infection. The mouth also is forced open by the resistance offered the lower jaw.

We may consider three ways by which infection travels from the nose to the eye; first, by the blood-vessels and lymphatics; second, by way of the antrum and the frontal sinus, this, of course, is only in those severe general eye infections; third, the lacrimal canal, but because the last is the more direct, we will speak of it as the principal way.

Several years ago I was consulted by a patient who noticed a large swelling appear near the left canaliculus whenever he blew his nose. Upon examination it proved to be an infiltration of air into the orbital tissues. There are many more cases on record wherein air has been forced through the lacrimal canals by blowing, sneezing, and coughing. If this is so in adults and it is, then how easy it is to force in the same way the gonococcus and other germs by those acts of sneezing which always follows the exposure of the new born child to a different temperature.

To prove that infection travels up the lacrimal canal, down which tears constantly flow which are supposed to be more or less antiseptic, let me report a case.

In August, 1890, I was consulted about a case of erysipelas at the left nasolabial junction in a child. The disease spread rapidly from here by way of the nasolacrimal membranes producing a dacryocystitis which showed plainly the way the disease traveled. The disease did not spread to any part of the face except at the point of infection which part was first cured. Later the nose responded to treatment, and last the eye.

My attention has been called to this route of infection several times but this case shows conclusively, without reporting more cases, that the nose, in a great many instances, is the true origin of eye infections, and that obstetricians should immediately cleanse the nose in order to prevent blennorrhœa neonatorum.

Let us consider the proper method by which the obstetrician can accomplish this nasal cleansing. First, there must be found some suitable drug which overcomes the following disadvantages: It must be nontoxic for we are dealing with a delicate system; it must not coagulate albumin, for coagulated albumin affords germ protection by sealing the lacrimal canal until a violent seizure of sneezing or crying forces into the eye a matured germ colony ready for action; it also must not be irritating, and lastly it must be powerful enough to destroy germs such as the gonococcus, Klebs-Loeffler bacillus, small bacillus of acute contagious conjunctivitis, the pneumobacillus, and the staphylococcus.

Notwithstanding that much has been said against its antiseptic qualities I know no more suitable drug to accomplish this nasal cleansing than disuccinic peroxide, for it embraces all these important features previously enumerated.

In upholding the virtues of this disuccinic peroxide it may be well to say that Verhoff and Ellis proved by bacteriological examination that a 1 to 1,000 watery solution of disuccinic peroxide kills the *Staphylococcus pyogenes aureus* in one minute, but if diluted with equal volumes of hydrocele fluid it required over two hours to obtain the same result. So far it is proved that disuccinic peroxide is powerfully antiseptic, and like all other antiseptics is weakened by dilution if passed through the tissues. But we must not forget the fact that we are not dealing with germs after they have penetrated the tissues but when they are free in the eye, the

nose, and their connecting tributaries. If we were fighting germs after tissue penetration then it may be said that antiseptics are still further reduced in strength if the tissues are engorged, that is if they are fully saturated with blood or serum, not by the greater dilution which would take place if the drug entered the tissues, but because of the reason that drug absorption does not take place in a violently inflamed eye because all chemical affinities are satisfied. Therefore in inflamed eyes with extreme engorgement all antiseptics are powerless because of the lost tissue penetration.

The only possible fighting means then that we have to destroy germs in severe eye infections is to reduce tissue saturation by drug or surgical depletion and strengthen phagocytosis by removing the destructive toxines by oft repeated washings with some mild nonirritating toxine neutralizer such as boracic acid or normal salt solution.

From the foregoing reasons we then obtain a law of absorptions which is, the penetrating strength of an antiseptic is in direct proportion to the amount of tissue saturation. Verhoff and Ellis investigations proved that when depending upon absorption we must increase the antiseptic strength of a drug in direct proportion to the degree of tissue saturation in order to produce in inflamed conditions the same antiseptic effect as when the drug is used in normal eyes. If we place one drop of a three per cent. cocaine solution in a healthy eye we obtain cocainization of the eye and sometimes of the fauces, but if we do likewise with a twenty per cent. solution of cocaine in a violently inflamed eye there is little or no anæsthetic effect, the same is noted with atropine; this then shows that inflamed tissues cannot take up more than to the degree of saturation.

The administration of a prophylactic for blennorrhœa neonatorum means germ destruction before tissue penetration, therefore if disuccinic peroxide is increased in strength anywhere from 1 in 500 to 1 in 30 to offset tear dilution there is no reason why it should not act better than other antiseptics because it penetrates the lacrimal canal and the conjunctival folds deeper than those antiseptics which coagulate albumin.

Having found a suitable drug, filling all requirements, it is not difficult to find a way to administer it, although great care must be taken while so doing, not to force the septic material further back into the Eustachian tubes, and because of their low position in the throat of the child the head should be tipped forward so that the fluid will flow out of the nose rather than into the throat.

There are two ways by which nasal cleansing may be accomplished—by a medicine dropper or an atomizer, the latter is preferable, because it is safe in the hands of the laity.

When there is a history of a vaginal discharge before birth the nose should be cleansed several times a day, but with no discharge daily spraying is sufficient if continued beyond the incubation period.

The mouth should likewise receive care and the lacrimal ducts massaged gently toward the eye in order to force out any septic material after which disuccinic peroxide, 1 in 250, or some other powerful antiseptic should be freely dropped into the eye. If necessary this treatment may be used for weeks without injury.

Before closing I wish to report a case for it shows a fair comparison of disuccinic peroxide (alphozone) with silver nitrate.

The case had developed ten days after birth and was apparently nasal in origin for the lacrimal duct on this side was involved. Silver nitrate in a two per cent. solution was used several times at birth and was again used several times a day for one week when the eye became infected but without results; upon separating the lids large quantities of yellow pus flowed out of the eye; after cleansing it was seen that the cornea was ruptured.—A 1 in 30 solution of disuccinic peroxide was dropped into the eye, hourly, night and day.—All other medication was stopped except atropine.—The nostrils were also cleansed with the same solution.—In twenty-four hours the eye showed signs of improvement and the case was discharged the fifteenth day as cured, although it had shown no signs of the former trouble for five days previous.

There are many more cases on record which go to prove that nasal cleanliness is a most essential prophylaxis in blennorrhœa neonatorum, but sufficient has been said. What now remains to be proved is which of the antiseptics is the most efficient for this nasal cleansing as I have mentioned disuccinic peroxide not in the sense of an absolute antiseptic, but as a possible improvement over silver nitrate.

449 Franklin Street.

THE STATUS OF THE BLOOD PRESSURE OBSERVATION IN LIFE INSURANCE EXAMINATIONS.*

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The general adoption of any test or procedure in medicine, as in any business or other profession, depends primarily upon its intrinsic worth and relative value as compared to procedures of like nature, and secondarily upon the ease of its performance and general applicability. In determining the value of the sphygmomanometer and the blood pressure observation in medical examinations for life insurance, the tests may be applied. Therefore, in an effort to answer the question as implied in my title, I have endeavored to present for your consideration a few thoughts bearing on the subject, as arguments for and against the general adoption of the blood pressure test as a part of the routine life insurance examination.

Believing that the most valuable expression of opinion would come from the medical departments of the life insurance companies themselves, I addressed a circular letter to the medical directors of about forty companies in the United States and Canada. Thirty-two replies to the series of questions contained in this letter have been received. The following is a summary of replies:—Number of correspondents, 32; companies employing the observation in all examinations, 0; companies employing the observation in certain cases, twenty-two or sixty-seven per cent.; companies employing the observation not at all, 10. Special conditions de-

*Read before the American Association of Life Insurance Examiners, Atlantic City, June, 1909.

manding the observation were mentioned in the following order:—a, Suspected high tension, 10; b, suspected heart disease, 5; c, suspected kidney disease, 5; d, over weights, 4; e, history of albuminuria or casts, 3; f, history of undue mental or physical strain, 3; g, special occupations, 1; h, depending on amount of insurance requested, 10; 1, 5,000 and over, 1; 2, 10,000 and over, 1; 3, 15,000 and over, 8; i, determined by age of applicant, 14; a, 40 years or over, 9; b, 50 years or over, 4; c, 60 years or over, 1.

Companies making allowance for physiological factors:—a, Digestion, 4; b, emotional excitement, 4; c, tobacco, 3; d, time of day, 2; e, age, 2; f, sex, 2; g, alcohol, 1; h, "usual physiological variations," 1.

Companies rejecting on high blood pressure, 10.

Companies not depending on high blood pressure for rejection, 6.

Companies failing to answer this question, 8.

Variations in blood pressure accepted as normal: 80-150 mm. Hg.; 90-150 mm. Hg.; 100-130 mm. Hg.; 120-140 mm. Hg.; 115-130 mm. Hg.; 150-170 mm. Hg.; 128-130 mm. Hg.; 155-160 mm. Hg.; 145-160 mm. Hg.; 150-170 mm. Hg.

Besides direct answer to the several questions I was gratified to receive a number of expressions of opinion regarding the value, scope, and applicability of the blood pressure test. Among these the following points were advanced as arguments against the general adoption of the blood pressure observation.

One company states that they do not use the blood pressure test and that "this is owing to long observation of its use in our large City Hospital, and from considerable experience with it in this office. We have decided that its interpretation is difficult even in the hands of an expert with the instrument, so that unless we could have a Sahli or a Thayer, or men of their type to use it in every instance, little if any accurate data could be obtained." Fortunately this opinion is by no means universal, were it so the use of the sphygmomanometer would be short lived at the hands of the medical examiner and unworthy of your consideration. On the other hand, clinical experience has already amply justified the employment of this most important measure, whose field of usefulness is becoming daily wider, as statistical data accumulates. Another authority says: "We do not neglect the blood pressure because we consider it unimportant, but because of the impossibility of obtaining satisfactory records except from our most experienced examiners." A third company remarks: "We have other tests, particularly that of the urine, which seem for the present to cover the ground and control the acceptance of just the same type of risks that are declined on account of high blood pressure." Still another says: "In our judgment there would not be much gained by the universal use of this test, in connection with the large number of small applications to warrant the expense it would involve, to say nothing of the fact that we are satisfied that a comparatively small number of medical examiners are equipped to make it." Another letter contains the following well defined reasons for not employing this test in every case: "1. Not one out of twenty-five practising physicians owns an instrument. 2. Life insurance examinations unfortunately must be made at the time of day most convenient to the proposer, also at his place of business, be that what it may. 3. The mercury instruments break easily so that we have trouble in getting our examiners to transport it to the place of examination, and as much trouble to get the proposer to call at the doctor's office. 4. In the hands of the physician who has not had sufficient experience I consider that the results obtained are of doubtful value."

The general trend of these remarks shows that the chief if not the sole difficulty lies not so much with the observation itself as with the examiner and the interpretation of his findings, and in less degree to the variety of instrument employed. Are not these the same arguments which for such a long time prevented the general adoption of the urine examinations, and here, do not these same objections still obtain in many quarters?

It appears to me that the objections contained in these arguments can readily be removed, if indeed they are not already largely overcome. The use of the sphygmomanometer is now being taught in most of the medical colleges, and the instrument is now quite generally used in both private and hospital practice.

Regarding the shortcomings of the apparatus itself, there are now upon the market instruments of considerable accuracy which may be easily applied and which should present little difficulty to successful use by any examiner, who is willing to spend a little time and patience in mastering the details of the technique. Even if, for the sake of argument, we admit these several shortcomings, we cannot close our eyes to what is being done in the field of general medicine. To quote a recent writer in this connection (L. Williams, *Clinical Journal*, London, January, 1908): "The sphygmomanometer is not merely a toy, but a scientific instrument of immense practical utility, on whose verdict the most momentous issues may depend." In further evidence please note that sixty-seven per cent. of my correspondents believe in the value of the sphygmomanometer as an aid in life insurance examinations, in selected cases, some intimating that they believe its general adoption to be an event of the near future. As one correspondent says: "It is often a pointer which leads to investigation which may disclose impairment, particularly of the kidneys." Another says: "From personal observation I am satisfied that this instrument, intelligently used, could be made to assist materially in the reduction of mortality. I expect that at no distant date it will become a routine practice in life insurance examinations." While a third says: "I would state that the further we pursue our observations the more we are impressed with the worth of this instrument as a prognostic aid." Nineteen other companies voice the expressions of approval of the employment of the sphygmomanometer in some cases. Two companies already employ special blank forms for recording the test.

This observation in the selection of a risk naturally becomes of more value as the age is approached when arterial, cardiac, and renal change become imminent. That this fact is generally rec-

ognized is shown in the answers to the question bearing on this point. At the present time this test is only generally employed after the fortieth year except in large amounts, or where there is suspected impairment of the heart, vessels, or kidneys.

That great dependence may be placed in this observation properly made is shown by the fact that ten out of the twenty-four companies answering this question have rejected on the blood pressure finding alone. Reference to the mortality statistics of the Penn Mutual for the past nine years adds force to this argument. In this table two facts are strikingly significant. First, deaths from apoplexy, organic heart disease, and nephritis, represent an average of 25.1 per cent. of the total mortality, and secondly the percentage of deaths from apoplexy and organic heart disease is increasing. Apoplexy from seven per cent. in 1900 to 9.5. per cent. in 1908; organic heart disease from 8.6 per cent. in 1900 to 9.3 per cent. in 1908.

Another very important reason for the general adoption of this examination lies in the fact that clinicians find it extremely difficult if not impossible to accurately estimate blood pressure by the sense of touch. To quote again (William Russell, *Arterial Hypertonus, Sclerosis and Blood Pressure*, J. B. Lippincott, & Co., 1908, p. 75): "I must, however, again add a warning note to the effect that feeling the radial is not always a reliable guide as to what the brachial pressure will read. . . . I have two such cases under observation as I write this, the radial artery being neither hard nor incompressible, and yet in both there is a steady reading of more than 200 mm. Hg." Tests along this line have satisfied me as to the truth of the statement, instances of a similar nature will probably be recalled by all.

We must admit as a possible argument against the general adoption of the blood pressure test, the uncertainty and variability of the many physiological factors which may affect a reading in any given case, and also at this time the lack of definite information concerning these normal variations.

To accurately determine the character of a risk, by this method, we should be in a position to say to what extent, posture, time of day, digestion, exercise, fatigue, mental excitement, alcohol, age, and sex affect the individual reading. Until recently these have all been uncertain factors, and much yet remains to be learned before each of these factors can be accurately limited.

It will not be possible at this time to enter into a consideration of these several factors, suffice it to say that already a large mass of available clinical data permits us with reasonable accuracy to set the physiological limits for a given age, which includes these various modifying factors. Experimental evidence shows that inaccurate figures are given by the narrow Riva Rocci armlet, and that the most uniform and reliable readings are obtained with a mercury instrument employing a 10 or 12 cm. arm band. Greater accuracy is also insured by an average of several readings upon the same applicant taken at different times and under different circumstances.

I believe that the latitude of variation covered by my correspondents is too broad, even if we accept the highest and lowest of these figures as extremes. Thus, referring to the tabulation of replies, we find the systolic reading between 80 and 170 mm. Hg., or a total variation of 90 mm. Hg. In comparison to this I quote the standards set by several observers.

Normal Range of Variation Systole.

Faure, direct measurement, from 110 to 160 mm. Hg.

Albert, direct measurement, from 100 to 160 mm. Hg.

Von Basch, indirect measurement, from 110 to 150 mm. Hg.

Bruce, indirect measurement, from 100 to 130 mm. Hg.

Graupier, from 115 to 125 mm. Hg.

Jellinek, 500 healthy soldiers, from 100 to 150 mm. Hg.

Sahli, high limit of health, from 135 mm. Hg.

Hansen, in twenty-five males between seventeen and thirty years, 137 mm. Hg.

According to Williams and Brunton the systolic reading for females is from ten to fifteen mm. Hg. lower than in males at the same age. It is also generally admitted that these figures are subject to advancement with increasing age, so that a relatively higher reading must be accepted as the years are added. Some observations which I have been carrying out recently would seem to indicate that the normal pressure in a young healthy adult, using alcohol and tobacco in moderation, ranges between 118 and 140 mm. Hg. With but few exceptions all seem agreed that the upper limit of the systolic pressure in the young, healthy adult lies between 140 and 150 mm. Hg., and that a continued reading above this should be regarded as a distinct danger signal calling for a more careful examination of the applicant.

The effect of abnormal conditions of the cardiovascular system and of the kidneys upon blood pressure, and the physical fitness of the applicant has been shown by a large number of investigators; among those referred to in the preparation of this paper were the following:

H. Engel, *Berliner klinische Wochenschrift*, October 26, 1908.

C. W. Sawyer, *Ohio State Medical Journal*, November, 1908.

A. E. Mills, *Australasian Medical Gazette*, January, 1908.

G. H. Norris, *University of Pennsylvania Medical Bulletin*, April, 1908.

Lauder Brunton, *Lancet*, October 17, 1908.

L. Webster Fox, *Colorado Medicine*, May, 1909, from which the following abstract is very significant: The report embodies a statistical study of one hundred ocular conditions in which hæmorrhage was a salient symptom. Of these seventy-three were retinal hæmorrhages, and of these seventy-three patients forty-six were nephritics and twenty showed evidence of arteriosclerosis. The average blood pressure in the seventy-three cases of retinal hæmorrhage was above 160 mm. Hg., the highest recorded being 265 mm. Hg., twenty-six had a pressure of over 200; twenty-six between 150 and 200; and only eighteen below 150 mm. Hg. Thus, in sixty-six cases showing the direct effect of abnormally

high blood pressure, all patients had kidney or arterial degeneration, and all but eighteen had a distinctly pathological elevation of blood pressure, if we accept the normal maximum systolic as 150 mm. Hg. In the light of this series alone, bearing in mind that 25.1 per cent. of the insured risks in one company, which I take to be a fair example of existing conditions, were due directly or indirectly to a pathological increase in blood pressure, I submit that in the sphygmomanometer we have a ready and accurate means of detecting a greater number of such cases than is possible by the present means at the disposal of the examiner for life insurance. This alone should be sufficient argument for the universal employment of this test, and which if adopted should result in much financial saving to the life insurance companies so using it.

1831 Chestnut Street.

THE MANUAL TREATMENT OF THE ABDOMINAL SYMPATHETIC.

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The founder of Swedish gymnastics, namely Per Henrik Ling, used in medical gymnastics to employ a kind of nerve pressing[1]; he also employed nerve strokings.[2] After his death in 1839, these manipulations continued in vogue and additional developments were recorded from time to time by Branting.[3] It is manifest from the works of one of the greatest enthusiasts of the Ling system of Swedish treatment, namely A. C. Neumann, that during the period, 1850 to 1860, many nerve pressings were in constant use, among others pressure on the solar plexus, sacral, and inferior hypogastric plexuses, etc.[4] These nerve pressings were applied with or without simultaneous trembling movement; sometimes blunt pointed sticks were employed by the operator in the case of deep seated nerves. The method with sticks was after a time abandoned as useless, and even the manual nerve pressing became of infrequent use, the benefit obtained being inconsiderable or nil. From 1870 onward the practitioners of Ling's system hardly employed these manipulations at all.[5]

Meanwhile Henrik Kellgren, a graduate of the Central Gymnastic Institute of Stockholm, in the early days of his practice elaborated his own methods of friction and vibration for the purpose of directly stimulating and soothing nerves, and during the late sixties was using his new methods with great success. But little has been written on the subject, the only attempts at detailed description being those of Dr. A. Kellgren,[6] (Henrik Kellgren's brother) and one of the authors[7] of the present paper. This may account for the fact that although in theory such nerve treatment is admitted to be a most powerful therapeutic agent, yet very few possess the technique requisite for its successful application.

In Sweden itself, whether at the Central Gymnastic Institute of Stockholm or elsewhere, Kellgren's methods of nerve treatment are hardly ever employed. We cannot regard the so called nerve pressings of Wide, which according to his own account are more a kind of muscle kneading,[8] as being even a colorable imitation.

The subject of the manual treatment of nerves opens up so large a field that in this paper we have been compelled to limit ourselves to the consideration of the abdominal sympathetic. We shall endeavor in this brief paper to give an outline of the anatomical and physiological basis for such treatment, together with an explanation of certain points in the technique, adding notes of a few cases that have occurred in our practice to illustrate our remarks.

The sympathetic nervous system may be described as consisting of a collection of ganglia, cords, and plexuses; and these fall into two groups: (a) The principal ganglionated cords; and (b) the great prevertebral plexuses, with the nerves proceeding from them. The principal ganglionated cords, which are united above in the cranial cavity and below on the coccyx, are placed symmetrically partly in front of and partly at the side of the vertebral column. The great prevertebral plexuses are situated in front of the vertebral column and occupy respectively the thorax, abdomen, and pelvis. These plexuses receive branches from the cerebrospinal nerves as well as from the ganglionated cords, and they form centres from which the viscera are supplied with nerves.

The ganglionated cords are connected with the cerebrospinal nerve through their anterior branches by means of the rami communicantes, which are of two kinds, white and grey, the former consisting of medullated and the latter of pale fibres. From a physiological as well as anatomical point of view, the sympathetic nerves of the thorax and abdomen must be regarded as being in communication with the posterior primary division of the corresponding spinal nerves through the rami communicantes, anterior primary divisions of the nerves, and the recurrent sensory fibres.

Although the physiology of the sympathetic of the trunk has by no means been thoroughly worked out, the following may be taken as a summary: The thoracic and abdominal sympathetic contain motor fibres for the muscle of the skin, acceleration nerves for the heart, secretory nerves for the sweat glands and vasomotor nerves for the vessels of the trunk and lower extremities. Some of these nerves communicate directly with the spinal nerves; most of them, however, run in the splanchnic nerves to innervate the abdominal bloodvessels. Section of the splanchnics in animals results in a great dilatation of the arteries and veins in the splanchnic area. In the splanchnic nerves also run the motor fibres for the muscles of the intestine, and secretory nerves

[1] Sondén, *Hygeia*, Stockholm, 1840, p. 122, and Georgii, *Kinetic Jottings*, 1880, p. 73.
[2] Ling, *Gymnastikens allmänna grunder*, 1866, p. 583-584.
[3] Branting, *Addresses*, 1844, 1846.
[4] *Die Heilgymnastik*, 1855, pp 211, etc.; *Lehrbuch der Leibesübungen*, 1856, pt. ii, pp. 265, etc.
[5] Hartelius, *Lärobok i sjukgymnastik*, 1870, pp. 88, 89; 1892, pp. 88, 89, also *De fysiska lifsyttringarna*, 1868, p. 168, and *Tidskrift i gymnastik*, p. 201, 202.
[6] *Vorträge über Massage*, 1888, also *Technic of Ling's System of Manual Treatment*, 1890.
[7] *The Elements of Kellgren's Manual Treatment*, 1903.
[8] *Handbook of Medical and Orthopædic Gymnastics*, 1903, p. 68.

for the pancreas. In the hypogastric plexus are found motor and inhibitory nerves for the muscles of the urinogenital organs and the rectum. It is curious how diametrically opposite have been the observations of modern experimenters as regards the function of the splanchnic nerves; some obtained increased peristalsis of the intestine, after stimulating these nerves, others inhibition thereof. The latter is the view usually held and is shared by Langley, to whom is due the elucidation of so many of the problems of the physiology of the sympathetic system.

Henrik Kellgren's experience (which dates back even previous to 1875) as regards the relation of posterior spinal nerves and abdominal organs is as follows: Excessively active, irritated, or inflamed conditions of abdominal organs are constantly accompanied by increased irritability in the points of exit on the course of the external division of the posterior spinal nerves in certain well defined areas, each area having its corresponding organ. Similarly paretic or atonic or inactive conditions of abdominal organs are accompanied by diminished sensation in the corresponding spinal area. He also found that the return to the normal of the sensation in these areas seemed to run hand in hand and closely follow the improvement in the corresponding abdominal organs. The following list indicates these areas:

Liver and gallbladder, dorsal 6th, 7th on the right side. Stomach, dorsal 6th, 7th, 8th on the left side. Pylorus, dorsal 6th, 7th, 8th on the right side. Intestines, dorsal 6th to 11th. Peritonæum as a whole, dorsal 6th to 11th. Spleen, dorsal 9th to 10th on the left side. Kidney, dorsal 10th to 12th. Genital organs as a whole, dorsal 12th; lumbar 5th; sacral 2nd to 4th. Rectum, sacral 4th. Bladder, sacral 1st and 3rd.

It will be noticed that these are very nearly the same as the skin areas as estimated by Head.

It is of interest to note that sometimes when patients who are more particularly sensitive receive a friction on one of the posterior nerves referred to, they experience a kind of sharp radiating pain in the very organ that corresponds to the skin area over which the friction is given.

There are three ways of influencing the abdominal sympathetic by means of the manual treatment of nerves:

Reflexly.	A.	Through the external branches of the posterior divisions of the spinal nerves.
	B.	Through the anterior divisions of the spinal nerves.
Directly.	C.	Through the abdominal wall and the viscera (or in the case of the coccygeal ganglion, through the skin) on to the plexuses themselves.

The manipulations commonly employed may be divided into—1. Frictions (not to be confounded with that form of massage over the skin sometimes called by the same name) which may be of varying strength, but are usually described as being of three types, light, medium, and strong. 2. Vibrations, which in the same way may vary in strength from light to strong.

Broadly speaking, frictions are stimulating, vibrations (unless very strong) sedative.

A. Through the external branches of the posterior divisions of the spinal nerves. Generally speaking, the external branches of the posterior division of the spinal nerves run backward through or between the erector muscles of the trunk, and their points of emergence gradually increase in distance from the middle line from above downward from the cervical to the lower lumbar region, and then more suddenly decrease in distance from the middle line in the sacral and coccygeal regions.

In order to execute a *friction* on these nerves the technique is as follows: The muscles of the patient's back must be relaxed and uncontracted, and to effect this the patient is placed in a position of rest, such as lying on his face or his back, etc. The position of the required nerve is then located exactly through the operator's knowledge of topographical anatomy. The nerves on either side of the spine may be treated simultaneously, or else those of one side after those of the other; of course in some cases it is only desired to affect the nerves of one side. The hand of the operator must be kept with the fingers approximated but somewhat flexed in the metacarpophalangeal and interphalangeal joints, the flexion in the two middle fingers being slightly greater than in the index and little finger; thereby the fingertips, closely approximated, lie in the same straight line whether viewed from above or in their palmar aspect. The fingertips so adapted are placed on one side of the nerve, so that the line of the fingertips runs parallel to the line of the course of the nerve; and in the ensuing manipulation it is of the utmost importance for the fingertips of the operator and the skin of the patient (together with any intervening thin clothing) to move as one over the underlying structures, otherwise a mere superficial massage of the skin will result. The fingertips are drawn sharply across the nerve in a direction which is at right angles to the course of the nerve. In practice it is found that the best method is to keep the hand nearly still and to effect the movement of the fingers by means of still further flexion in the metacarpophalangeal and the interphalangeal joints. During the transit of the fingertips across the nerve a certain amount of pressure should be applied, but not until the friction has actually commenced; it should reach its maximum at the moment the fingertips are passing across the nerve and should be relaxed immediately afterward. The fingertips and the skin are then moved lightly back to the original position and the manipulation repeated.

In the case of very insensitive nerves, if the patient is lying on his face, the thumb and forefinger placed in apposition may be used instead of the fingertips.

If the friction has been correctly executed, a distinct snap of the erector muscle will be felt by both patient and operator, and a decided feeling of stimulation of the particular nerve treated will be experienced by the patient. If incorrectly executed, either from sliding the fingers over the clothing or skin, or from commencing too soon and keeping up the pressure too long, or from doing it too slowly, no such snap will be felt, and the patient will mere-

ly experience a dull pressure pain quite different from the one just mentioned.

When carrying out the directions given above that the friction should be applied as much as possible at right angles to the course of the nerve, it should be remembered that the spinal nerves referred to do not all run in the same direction. Bearing this in mind, it will be sufficient to specify the direction of the friction as follows:

Dorsal region, from within upward and outward.

Lumbar region, from within outward and slightly upward.

Sacral region, from within outward.

Coccygeal region, directly across the long axis of the coccyx.

The technique of the application of a *vibration* on any particular nerve requires but a much shorter description. The nerve having been located as before, the fingertips of the operator are placed over it, and set into a rhythmical vibration. The mode of doing this is briefly as follows: The joints of the finger, wrist, and elbow are kept as loose as possible as is compatible with the correct execution of the movement. The fingertips remain in contact with the part of the body to be treated, and must not leave it during the application of the vibration. A rapid alternating contraction and relaxation of some of the muscles of the forearm, in whole or in part, is then set up. The actual excursion of the movement at the metacarpophalangeal and wrist joints varies under ordinary circumstances from 1/20 to ⅛ inch, and the speed of the vibrations is from 10 to 12 each second. The amount of muscular force should be minimized: With a gentle vibration the contraction of the muscles of the forearm should be only just perceptible to the sense of touch. The result of this vibration from the operator's hand is that the part under treatment will be subjected to vibration, i. e., a series of rapid, wavelike movements of alternating application and removal of pressure. Were the operator's hand removed from the part treated each time that the forearm muscles became relaxed, the manipulation instead of a vibration would immediately become a series of percussions like a rapid tapotement, or in other words a somewhat stimulatory instead of a sedative application.

B. Through the anterior divisions of the spinal nerves. Frictions may in some cases be applied on the intercostal nerves in the thorax or abdomen, either along the main trunk of the nerves, or their lateral or anterior cutaneous branches. It is generally found that the effect of these frictions is more on the muscles which the nerves supply than on the visceral area with which the nerves are in physiological relation. This is most likely due to the fact that the intercostal nerves are partly motor, unlike the external branches of the posterior divisions, which are purely sensory.

Frictions may in some cases be applied along the course of the ilioinguinal and iliohypogastric nerves. These nerves appear to be more intimately connected with the abdominal viscera more especially the pelvis than are the intercostal nerves.

Vibrations on the lower intercostal nerves are given for neuralgic or rheumatic affections of the sternum, radiating downward into the point of the nerves or muscles, but hardly ever with the view of reflexly affecting the abdominal contents.

C. Through the abdominal wall and the viscera (or in the case of the coccygeal ganglion, through the skin) on to the plexuses themselves.

The general technique of all frictions through the parietes on to the sympathetic ganglia is as follows: The patient must be in a position of rest with the abdominal wall relaxed; it is therefore convenient to have him in a semiflexed position, i. e., with the trunk resting on an inclined plane to form an angle of 45 degrees or so with the horizontal plane on which the lower extremities rest. (This in the terminology of Ling's system is known as "half lying" position.) In the case of unusual tendency to reflex contraction of the anterior abdominal muscles, this angle may be increased, or the knees may be drawn up and the feet fixed, either of which will not only diminish the reflex irritability of the muscles mentioned, but also decrease the intraabdominal tension. (Technically known as "crook half lying" position.) The hand of the operator, with the metacarpophalangeal and interphalangeal joints kept extended, is then placed so that the fingertips lie over the topographical site of the portion of the sympathetic it is desired to stimulate, and the patient is told to breathe freely. With each expiration the fingertips are approximated to the posterior abdominal wall, the intestines, etc., being gently pushed out of the way in so doing. The fingers must not be thrust in suddenly, as that would cause pain and bring about a reflex contraction of the anterior abdominal muscles which would prevent their advancing. The fingertips having descended deeply enough, the frictions are then applied across the plexus it is desired to influence, a little extra pressure being applied meanwhile as explained when describing the technique of the frictions over the external branches of the posterior divisions of the spinal nerves.

Vibrations on the deep seated sympathetic ganglia of the abdomen are but rarely given, for if the nerves are so tender as not to allow of frictions, neither will the muscles allow of the onward passage of the finger tips, but will reflexly contract and prevent their advancing. Still it is possible to suppose that they might sometimes be applied; the fingertips would be placed over the painful area and vibrations of varying strength then set up in the manner described.

1. Solar plexus. The fingertips are placed some two or three inches below the ensiform sternum and are pressed in in a backward and slightly upward direction. The frictions are made transversely across it, or in some cases from above downward. In thin persons with lax abdominal walls the manipulation is easy of execution and stimulation of the abdominal sympathetic as a whole is often the result. In fat individuals with unyielding abdominal walls the manipulation frequently loses greatly in its effect—indeed, sometimes it is impossible to execute at all. In such cases, a similar effect to that brought about by stimulating the solar plexus can be induced by

(a). Making frictions either from above downward or from side to side on the umbilicus itself.

(in which case a sharp pain is felt passing up to the penis in males) and generally speaking radiating in all directions in the abdomen. The anatomical reason for this is not clear.

(b). A strong shaking movement in the pit of the stomach.

2. Semilunar ganglia. These ganglia are stimulated together with the solar plexus by means of the friction just described. In thin subjects with lax abdominal walls, however, the fingertips, by being pressed backwards and slightly outwards away from the middle line, would specially influence either the left or right semilunar ganglion according towards which side of the abdomen they were directed.

3. Renal plexus. The fingertips are placed on the abdomen at a point about three inches above and three inches external to the umbilicus (in persons of average size). The fingertips are passed backward and inward and the friction executed transversely across the kidney from without inwards.

4. Inferior hypogastric plexus. The fingertips are placed over the topographical site of the promontory of the sacrum; they are pressed in a backward direction, and the friction executed transversely.

5. Sympathetic nerves over the bladder. If the fingertips are placed over the symphysis pubis a little to the side of the middle line, and if a strong vibration or shaking movement is then executed in an *upward* direction, the patient frequently experiences a desire for micturition and in some cases even a feeling of congestion in the head, pointing strongly towards a sympathetic visceral and vasomotor effect. It is difficult to explain this anatomically, as the vesical plexus is situated to the side and lower part of the bladder.

6. Other parts of the abdominal sympathetic may be reached in a way similar to those previously described.

7. Coccygeal ganglion. The patient may either lie on his side with the knees a little flexed or be placed face downward with the thighs somewhat abducted, in case the gluteal muscles show a tendency to contract and impede the operator's finger. The tip of the forefinger is passed around the tip of the coccyx; it is then pressed backward and upward through the skin so as to lie on the anterior surface of the coccyx; the friction is then executed from above downwards. The patient in many cases experiences a kind of lightning pain through the abdomen, with a desire to defæcate and a sensation of fullness in the head and neck; sometimes his face can even be seen to flush.

If difficulty is experienced in pressing the forefinger on to the anterior aspect of the coccyx in consequence of rigidity of the perineum the forefinger can be passed in per rectum and applied to the coccyx through the rectal wall.

Choice of manipulation. It may be taken as a general rule that frictions should be used unless contraindicated by great tenderness. (This does not hold good for the suprapubic vibrations as mentioned above.) The slight pain caused by light frictions generally disappears after a few applications, and the strength of the frictions can then be increased with favorable result. Even in the case of great tenderness, where vibrations alone can be employed to begin with, it will frequently be found that after half a minute or so light frictions can be borne, the strength of which can in their turn be increased in a very short space of time. In the case of diminished sensation, vibrations with their sedative effect are naturally contraindicated, and recourse must be had to frictions.

Length of time of application. As regards the posterior spinal nerves, vibrations may be kept up for varying intervals of two or three to fifteen minutes—it is seldom necessary to continue longer. As regards frictions, they should not be applied in too rapid succession—one a second if only a few are given, or one every two or three seconds if more than about half a dozen are given. A convenient way of administering frictions over a longer period is to combine them with another manipulation, say petrissage, of the same organ. It will then generally be found that the latter, if correctly applied, tends to aid the effect the frictions are intended to produce—i. e., either to revive sensation in a dull area or reduce it in a supersensitive one. (Space does not permit us to describe the petrissage, etc., of individual organs.) As a general rule the more energetic the friction, the shorter the number of applications. As regards the plexuses themselves, from two to six frictions are generally enough excepting as regards the coccygeal ganglion, when up to twelve may be applied. Only under very exceptional circumstances should this number be exceeded.

The results of the manual stimulation whether direct or reflex of the abdominal sympathetic have as yet only been studied from a clinical point of view. Broadly speaking, they may be summarized as a restoration of the normal "tone" of the abdominal nerves. Considered more in detail, the clinical effects may be specified under two heads:

1. Immediate. A series of frictions may make evident an increased function in the particular organ supplied by the nerve manipulated, i. e., eructation from the stomach may ensue, peristaltic waves may arise in a dilated colon, a large secretion of urine may result, a sense of defæcation or micturition may arise, or vasomotor phenomena may result —this is especially the case when vasomotor disturbances are present, as in Raynaud's disease, anæmia of the brain, shock, etc., and are evinced by the patient feeling the blood rush to the head, slight dizziness occasionally ensuing. Indeed in some cases the patient's face may be seen to flush. (This can, if necessary or desirable, be prevented by applying a firm pressure on the coronal suture while administering the friction on the sympathetic nerve.) Cold hands and feet may suddenly become warm.

2. Remote. Amelioration in the defective function of the organs for which the treatment is applied. A good example of a rapid effect is frequently seen in cases of constipation.

The physiological explanation of the beneficial effects resulting from the treatment we have expounded is still somewhat obscure. There are probably several elements:

(1). Sensory stimulation. In the case of muscles, stimulation of the sensory nerves that are supplied from the same trunk that gives off the motor nerves to the muscles may reflexly cause increase in tone or

even actual contraction. Possibly there is an analogy in the case of the sensory nerves and the abdominal viscera, so that inversely diminution of the sensation may reflexly produce a diminution in the function of the viscera.

(2). Vasomotor element, already referred to.

(3). Trophic element (?).

Indications. The indirect method, i. e., through the medium of the posterior spinal nerves, is largely employed by us with great benefit in the majority of affections of the abdominal organs, even in acute inflammatory conditions, where of course we modify the strength of the manipulation, length of application, etc., to suit each individual case. We have also employed it during parturition and are quite satisfied with the result.

The direct method is most useful in irritated and chronic inflammatory conditions of the abdominal organs, such as chronic diarrhœa, endometritis, etc. In these cases light frictions on the abdominal ganglia should be employed. In atonic and paralytic conditions of the organs, i. e., severe constipation, dilatation of viscera, strong frictions would be indicated. In vasomotor disturbances such an Raynaud's disease, shock, anæmia of the head, we have the indications for strong frictions.

Personally we do not use the direct sympathetic (nor, for the matter of that, the indirect method) as a treatment *per se*, but always in conjunction with other manipulations and active exercises where the latter can be performed. In obstinate and intractable abdominal conditions we have found that the direct method is one of the strongest and most effective measures at our command—it will frequently succeed when everything else has failed.

We append a few details of cases which have actually occurred in our practice and illustrate the relation between the abdominal viscera and abdominal sympathetic as elicited by nerve friction. (Cases merely illustrating reflex skin areas in the posterior divisions of the spinal nerves are not mentioned.)

Disease.	Abnormities of sensation.
Constipation, fifteen cases.	No sensation coccygeal ganglion.
Constipation, ten cases.	No sensation coccygeal ganglion with diminution fourth sacral nerve.
Constipation, five cases.	Diminution all abdominal sympathetic except solar plexus.
Dilatation of the ascending colon.	Decrease right half abdominal sympathetic.
Dilatation of the stomach.	Increase solar plexus; increase sixth to ninth dorsal nerves on the left side.
Dilatation of the stomach.	Decrease solar plexus; decrease fifth to ninth dorsal nerves on the left side.
Chronic diarrhœa, two cases.	Increase all abdominal sympathetic.
Chronic diarrhœa, one case.	Diminution inferior hypogastric plexus.
External hæmorrhoids.	Diminution coccygeal ganglion and sacral nerves.
Intestinal autointoxication.	Diminution seventh to twelfth dorsal nerves, all sacral nerves; decrease coccygeal ganglion.
Diabetes.	No sensation solar plexus, increase renal plexus.
Chronic desquamative nephritis.	Increase renal plexus.
Chronic interstitial nephritis.	Decrease renal plexus.
Incontinence of urine.	Decrease whole of abdominal sympathetic; increase sixth to ninth dorsal nerves on the left side.
Nocturnal eneuresis, four cases.	No sensation coccygeal ganglion; diminution during suprapubic functions.
Neurasthenia, six cases.	Increase solar plexus; rest of abdominal sympathetic normal.
Neurasthenia, five cases.	Increase in all abdominal sympathetic.
Hysteria, one case.	Increase right half of the abdominal sympathetic.
Hysteria, six cases.	Increase, whole of abdominal sympathetic.
Melancholia.	Diminution abdominal sympathetic and all spinal nerves.
Melancholia.	Diminution abdominal sympathetic; spinal nerves normal.
Locomotor ataxia.	Increase solar plexus; decrease rest of abdominal sympathetic; no sensation coccygeal ganglion.
Advanced exophthalmic goitre.	Decrease whole of abdominal sympathetic.
Myxœdema.	Decrease whole of abdominal sympathetic.

Of course a much more extensive series of observations would have to be taken before establishing any laws as to the mutual relation and reciprocal effect of the abdominal sympathetic and the abdominal viscera. Pending this, we can only say that there can be no doubt of the beneficial effects of the manual treatment of the abdominal sympathetic in a great many cases, provided always that the technique is the correct one.

4 Craven Hill, Lancaster Gate, W.

Therapeutical Notes.

Arsenic in the Treatment of Chorea in Children.—According to Allan, in a paper contributed to the *American Journal of the Medical Sciences* for February, 1910, which is abstracted in the *Therapeutic Gazette* of June 15, 1910, Gordon Sharp believes in saturating the tissues rapidly with arsenic. For a child between eight and fifteen years of age he prescribes the following mixture:

℞ Solution of potassium arsenite, ... ℥ss;
Tincture of capsicum, ... ♏xxv;
Fluid extract of licorice, ... ℥ss;
Chloroform water, ... ℥vi;
Water, ... q. s. ad ℥xii.

M. Sig.: One tablespoonful three times a day immediately after meals.

If after a week no improvement is manifested Allan increases the amount of the solution of potassium arsenite in the mixture to 300 minims. He believes that if arsenic is going to do good in chorea, it will show its beneficial action within the first fortnight. When progress is being made he continues this treatment until the patient can walk along a straight line, or stand on the leg of the affected side with steadiness. After all the movements have ceased he prescribes the following:

℞ Sodium bicarbonate, ... ℥ii;
Tincture of capsicum, ... ♏xxv;
Fluid extract of licorice, ... ℥i;
Chloroform water, ... ℥vi;
Water, ... q. s. ad ℥xii.

M. Sig.: One tablespoonful three times a day after meals.

According to Gordon Sharp this latter mixture is given because it "washes the arsenic out of the tissues"; but Allan admits that the statement may not be scientific.

Stovaine Injections in Dental Operations.—Spinal anæsthesia in dental operations by Jonnesco's method is proposed by a writer in *L'Odontologie*, abstracted through *L'Union pharmaceutique* for April, 1910, in the *Prescriber* for June, 1910. Spinal anæsthesia has the advantage of not causing profound intoxication of the whole system, the patient does not entirely lose consciousness, though in a state of complete muscular relaxation, and there is no shock. One cubic centimetre of solution containing 0.0005 gramme strychnine sulphate and 0.03

gramme stovaine in sterile water is injected in the medullary canal after withdrawal of a few drops of fluid therefrom. The injection is made while the patient is in a sitting position, the neck well bent and the chin resting on the sternum. After injection the patient is gently laid in the horizontal position for three minutes, then raised to a sitting posture for five minutes before operating. As the patient must rest in bed for twenty-four hours the operation cannot be performed in the dentist's surgery.

Prescriptions in Chronic Bright's Disease.—The *Therapeutic Gazette* for June, 1910, cites the treatment advocated by Bradshaw (*Liverpool Medico-Chirurgical Journal*, January, 1910) for the management and treatment of chronic Bright's disease. In slight cases no medicine may be required, but if anæmia is present an occasional chalybeate course is advisable. One of the following prescriptions may be ordered:

℞ Solution of ferric acetate, B. P., ...mxv;
Glycerin, ...3i;
Solution of ammonium acetate, ...3ss;
Infusion of calumba, ...ad 3i.
M. Take twice or thrice a day.

℞ Ferrous sulphate, ...gr. iss;
Magnesium sulphate, ...3i;
Diluted sulphuric acid, ...mx;
Peppermint water, ...ad 3i.
M. Take three times a day.

℞ Reduced iron, ...gr. xx.
Pone in capsulas No. xx.
Sig.: One three times a day.

The bowels must be kept moderately open. The kind and amount of aperient must be determined on general considerations. In all cases in which the arterial tension is high the author gives a mild mercurial purge at intervals of a week or ten days. His favorite formula is the following:

℞ Mass of mercury, ...gr. ii;
Extract of euonymus, ...gr. iss;
Resin of podophyllum, ...gr. ½;
Compound rhubarb pill, ...gr. ii.
M. Ft. pil. No. I.

A frequent symptom in all forms except the pure cirrhotic kidney is the presence of anasarca. If it is slight, it calls for no special treatment; if it tends to increase, it is desirable to withdraw sodium chloride from the diet as much as possible. No salt is to be added to the food at table, and the bread and other articles of food are to be prepared without it. The following mixture may be prescribed:

℞ Theocine sodium acetate, ...gr. v;
Caffeine, ...gr. ii;
Ammonium benzoate, ...gr. v;
Chloroform water, ...ad 3i.
M. Take this every four or six hours.

Or, if the heart is dilated:

℞ Infusion of digitalis, ...3i;
Potassium citrate, ...gr. xv;
Spirit of chloroform, ...mx;
Infusion of buchu, ...ad 3i.
M. Take every six hours.

In cases with much dropsy the most useful medicine is the well known Baillies' pill:

℞ Mass of mercury, .
Pulverized digitalis, } .....āā gr. i.
Pulverized squills, .
M. Ft. pil. Take every six hours.

REMEDIES OF RECENT INTRODUCTION.

(*Continued from page 129.*)

Guaiacodeine, codeine orthoguaiacolsulphonate, is the neutral codeine salt of guaiacolsulphonic acid. It is produced by the double decomposition of a soluble salt of codeine with the potassium or barium salts of orthoguaiacolsulphonic acid taken in molecular quantities. It forms a white crystalline powder, soluble in 90 parts of water, 450 parts of alcohol and 30 parts of methyl alcohol. It is insoluble in ether and very slightly in chloroform. Very soluble in hot water. It is used as a pulmonary sedative in tuberculous disease.

Guaiacose is the name applied to a fluid somatose containing 5 per cent. of calcium guaiacolsulphonate, forming a dark brown fluid miscible with water. It is recommended as an expectorant, antiseptic, and alterative, and is also as a tonic and nutrient, in doses of three to four teaspoonfuls daily.

Gynoval is the isoborneolester of isovalerianic acid forming a colorless fluid of aromatic odor and mild oleaginous taste which is difficultly soluble in water, but dissolves readily in the ordinary organic solvents. It is recommended as a mild nervine and antispasmodic, having all the properties of valerian. It is put up in perles containing 4 grains each, the dose of which is two.

Hæmaformyl is a compound of hæmatoxylin and formaldehyde, which is intended for use in digestive troubles, taken internally, and as an application to wounds externally.

Hectargyre is hectine combined with mercury. Dose: 20 to 30 drops daily of a 0.1 per cent. solution.

Hectine is sodium benzosulphoparaaminophenylarsenate. It is readily soluble in water, and its solutions may be sterilized; it is less toxic than atoxyl. Dose: 1 c.c. of a 0.1 per cent. solution.

Horsine is one of the latest of the fantastic preparations advocated in the treatment of tuberculosis by certain French physicians. At a meeting of the Société internationale de la tuberculose, held in Paris, February 8, Dr. S. Bernheim read a paper advocating the use of the muscular plasma (suc: juice) of the horse, which he asserted he had himself employed with remarkably good results in 223 cases of tuberculosis. The juice of the muscular fibre is employed. (It is interesting to note the tendency of French scientists to give titles of English derivation to products of their introduction. Fourneau, the discoverer of stovaine, gave the English translation of his own name as a substitute for the sesquipedalian chemical title, and now we have "horsine" as an equivalent for the French "suc de viande de cheval"!)

Hepptine is the trade name under which Dr. Maurice Hepp, Paris, puts out pure physiological gastric juice obtained from the living pig.

Hexachinol is an oxychinoline compound of hexamethylenetetramine which is recommended for the treatment of gonorrhœa and cystitis. Marketed by Parmele Chemical Company, New York.

Hyrgoferment is a protected name for colloidal mercury.

(*To be continued.*)

NEW YORK MEDICAL JOURNAL
INCORPORATING THE
Philadelphia Medical Journal
and The Medical News.

A Weekly Review of Medicine.

Edited by
FRANK P. FOSTER, M. D.

Address all business communications to
A. R. ELLIOTT PUBLISHING COMPANY,
Publishers.
66 West Broadway, New York.
Cable Address: Modjour, New York.

SUBSCRIPTION PRICE:

Under Domestic Postage Rates, $5; under Foreign Postage Rate, $7; single copies, fifteen cents.

Remittances should be made by New York Exchange or post office or express money order, payable to the A. R. Elliott Publishing Co., or by registered mail, as the publishers are not responsible for money sent by unregistered mail.

Entered at the Post Office at New York and admitted for transportation through the mail as second class matter.

NEW YORK, SATURDAY, JULY 23, 1910.

ARTERIAL SPASM IN THE BRAIN.

The frequency of spasmodic contraction of the cerebral arteries is probably not generally known, and the manifestations to which it may give rise are often not traced to their true cause. Many a case of seemingly unaccountable suspension of intelligence, sometimes of only momentary duration, and many instances of localized paralysis and even hemiplegia, transitory or permanent, may reasonably be imputed to such a process. The occurrence itself is largely a matter of inference, for whatever marks it leaves to be discovered post mortem are not found in the affected arteries, but in those regions of the brain that draw their blood supply from the vessels involved. Fortunately, it is in general only the small arteries that undergo spasm, so that the condition which one would call apoplexy must but seldom be the result; still, the spasm may be productive of such pronounced effects as may well give pause to those who see cerebral hæmorrhage in every case of apoplexy. It is fortunate also that the spasmodic contraction is usually not sufficiently prolonged to occasion grave interference with the integrity of the brain.

An interesting contribution to the history of cerebral angiospasm, by Allan and Wilson, appears in the July number of the *Glasgow Medical Journal*. They report four cases, one of which, coming on not long after parturition in a woman with a greatly enlarged heart, proved fatal. Though the labor, her ninth, was difficult, she appeared to progress favorably for about ten days and was allowed out of bed; but she was suddenly attacked with dyspnœa, some palpitation, and pain in the chest, at the same time coughing up blood, so that the physician in attendance made the diagnosis of pulmonary embolism. After this attack she had difficulty in pronouncing words, although she knew what she wished to say. After three weeks in bed she was again allowed up, but the dyspnœa and defective articulation never quite passed off. Her urine was albuminous and there was slight œdema of the feet.

About ten weeks after her confinement she gave a sudden cry and had lost the power of speech and that of moving the left arm. She had no pain and was perfectly conscious, but she could not form words and could not swallow. There was paresis of the left side of the face together with that of the left arm, and her head and eyes deviated to the right. The pupils were active, equal, and of medium size, and there was no squint. She was able to sit up in bed and could walk. All the tendon reflexes were present but not exaggerated. She lingered for two months, having to be fed with the nasal tube, as she was still unable to swallow. The paralysis of the left arm became absolute, she was drowsy, œdema of the face supervened, and several of the finger tips and the extremities of the nose and ears showed deep congestion followed by gangrene. In fourteen weeks from her confinement she was found to be blind; in another week all four of the limbs were paralyzed, there was incontinence of urine and fæces, and fresh patches of gangrene appeared. Cheyne-Stokes breathing had been present for some weeks before her death, and dyspnœa was prominent during the last two days of her life.

Extensive areas of softening were the chief lesions found post mortem in the brain, but there were thrombi of various ages in the arteries supplying the softened areas. The necroscopist's report says: "With reference to the supposed origin of these thrombi, with resultant softenings and gangrenous areas, in spasm of the vessels as opposed to thrombosis occurring as the result of arterial degeneration, it is important to note that neither the cerebral nor the digital vessels show any evidence of previous degeneration, and also that the vessels in the healthy portions of the brain were found to be normal. Against multiple emboli being the cause of the conditions found, there is the cortical distribution of the lesions, the numerous *small* vessels partially or completely closed, and, of course, the similar implication of the nose and the extremities."

But little real light has been cast upon the ætiology of cerebral angiospasm, but various authors' conjectures are to the effect that some toxic substance engendered within the system produces it by acting as a direct irritant to the vessels, and that the vasomotor nerves are not primarily at fault.

PRESCRIBING BY TELEPHONE.

There can be little doubt that grave errors have occurred as the result of telephoning orders to apothecaries, and probably the process ought not to be resorted to except in cases in which serious consequences may be apprehended from delay, though a writer in the *Pharmazeutische Zeitung* for July 6th questions if more accidents in dispensing are not due to illegible handwriting and other sources of uncertainty in written prescriptions than to misunderstandings in telephonic conversations between physicians and pharmacists.

It seems that the dangers, real and assumed, of telephone prescribing have led to some official and semiofficial action in various parts of Germany, and several precautionary measures have been suggested. Among these devices is that of requiring the apothecary to write down the telephone message as he receives it and the physician to write it out after sending it, the latter to transmit his copy to the pharmacist at the first opportunity. It may be thought that this is a grotesque requirement, for the untoward result of an error would occur before there was any chance of comparing the two writings; but further consideration will, we think, make it clear that the procedure really does in some measure serve to diminish the risk of a faulty message, because the mere act of writing out something that has been spoken tends to the recognition and correction of an error that might otherwise have passed unnoticed.

It appears that there are physicians and pharmacists who object strenuously to telephonic prescribing under any circumstances. Among the grounds of their objection is the fear that persons addicted to the habitual use of morphine may succeed in getting illicit supplies of that drug by telephoning in the name of some practitioner of medicine. It seems to us, however, that it would take an exceptionally crafty "morphine fiend" to hold out under the cross questioning which an experienced pharmacist would in all probability subject him to.

On the whole, we think that telephoning to the apothecary has a legitimate place in medical practice, and that it is at least as safe as prescription writing, provided due care is exercised. But there is a form of telephone prescribing which seems to us to be really dangerous in many instances. We have in mind the response given by the physician to a message received from a patient's house. The practitioner may be in a confused state of mind, having been suddenly roused from sleep, and the inquirer is pretty sure to be more or less excited and disposed to jump to a false understanding of the doctor's reply. The case is far different from that of a conversation between a physician and a trained pharmacist.

TUBERCLE BACILLI IN THE STOOLS.

Tubercle bacilli were at one time believed to appear in the stools only in the cases of patients who were suffering from tuberculous lesions of the gastrointestinal tract or of those with pulmonary involvement who swallowed their bacillus laden sputum. In 1906 Emerson (*Clinical Diagnosis*, p. 390) found acid fast bacilli in the stools of fifty-seven patients, thirty-three of whom proved on post mortem examination to have no alimentary involvement. Since that time numerous observers have noted the presence of acid fast bacilli in the stools of tuberculous patients, and recently D. Moore Alexander (*Journal of Hygiene*, June 15th) has published a careful study of the subject in which the findings were checked by inoculation experiments. Alexander injected the fæces of twenty-four tuberculous patients into guineapigs, and in the twenty-three in which acid fast bacilli had been noted in the stools the guineapigs inoculated contracted a general tuberculous infection. In the one negative case no acid fast bacilli had been demonstrated in the stools by microscopical examination. Acid fast bacilli other than the tubercle bacillus have occasionally been referred to as occurring in the fæces, but such findings would appear to be rare, as Alexander could find none in the stools of one hundred and twenty-nine nontuberculous patients. He did encounter a small pear shaped body with this staining peculiarity, but states that this could not be confounded with the organism of tuberculosis. Herter describes the same organism, but does not identify it.

Of fourteen patients in whom early pulmonary involvement was suspected, twelve of whom ultimately manifested the disease, Alexander found acid fast bacilli in the stools of nine. This seems to substantiate the view that the search for tubercle bacilli in the stools may be a helpful procedure in the early diagnosis of the disease. Rosenberg's persistent contention that the disease is practically always a bacteriæmia also finds support in Alexander's studies of the fæces in various tuberculous manifestations. Of patients with bone or joint involvement, two out of seven exhibited acid fast bacilli in the stools; with tuberculous meningitis, four out of five; with miliary tuberculosis, four out of four; with tuberculous adenitis, two out of six; with chronic pleurisy, two out of four. In six cases of lupus none were found.

The technique of the test is simple. A portion of the liquid fæces is smeared on the slide, fixed by heat, and stained in the ordinary manner. As the bacilli are more often found in the liquid stool, he recommends securing such a stool by means of a purgative if necessary. The test may be checked by inoculation experiments, not more than 0.02 of

a gramme of fæcal matter being used, as larger doses of fæces ordinarily prove fatal. The liquid should be diluted to a strength of one per cent. before being injected.

DIABETES IN CHILDREN.

In the March number of the *Nordisk Tideskrift for Terapi* Mauritus Lauritsen, of Copenhagen, emphasizes the importance of the early diagnosis of diabetes in children. When the diagnosis is doubtful, as in temporary glycosuria or in glycosuria following acute diseases, he gives a test meal consisting of rice, fish, potatoes, and bread. The urine is collected for the first four hours after the meal. If the glucose is increased, he employs antidiabetic treatment at once.

Children of diabetic families and those who have boils, acne, pruritus, psoriasis, eczema, or gouty manifestations should be watched. Both sexes are equally affected. In none of his twenty-seven cases could any disease of the pancreas or lesion of the central nervous system be discovered, or any history of traumatism. The prognosis is very bad, except in mild cases, probably on account of the pronounced tendency to the formation of diacetic acid and acetone. His cases are classified as mild when the glucose disappears rapidly with a diet poor in carbohydrates and with just enough proteid to keep the total nitrogen of the urine at 13 to 15 grammes; moderate if the glucose disappears when the nitrogen is brought down to from 7 to 13 grammes; and advanced when the glucose disappears when the nitrogen is kept below 7 grammes.

It is due to Weintraud that the relation of glucose to the oxidation of nitrogenous food has been worked out, so that we now know that a diet almost free from carbohydrates and with a very small amount of proteid can be given over a long period without harm. By such a diet it is possible to decrease the glycosuria and at the same time increase the bodily weight and maintain the nitrogen equilibrium. In mild cases carbohydrates increase the glucose more than the proteids do, while in severe cases the proteids increase the glucose more than the carbohydrates. The effect of the various proteids differs in mild cases, but not in severe ones. Lactalbumin and serum albumin have a greater effect than egg albumin. Vegetable albumin stands about midway. Also the carbohydrates vary, so that lævulose is fairly well tolerated, lactose badly, and maltose very badly. Fat does not seem to affect the amount of glucose.

The prevention of diacetic acid and acetone is more important in children than in adults. They are derived from fats and proteids, while carbohydrates, especially oatmeal and lævulose, which have been completely oxidized seem to prevent their formation. Glycerin also acts against the formation of diacetic acid and acetone, but is too irritating to the kidneys.

THE TREATMENT OF YOUNG DIABETICS.

The diet, according to the same author, is the chief part of the treatment, but gives the best results when used in conjunction with other measures. In moderate and severe cases the child is put to bed, to give it physical and mental rest and to decrease tissue waste. Massage is given daily. When the glucose has disappeared, he allows short walks once or twice daily. The bowels must of course be kept regular. Unless there are complications, no medication is necessary, except the alkaline treatment. If the formation of diacetic acid and acetone cannot be prevented, they must be eliminated from the system. This is best done by giving large doses of sodium bicarbonate in soda water. The vegetable alkalies and sodium bicarbonate combine with the organic acids to form a compound which is more easily excreted in the urine. If we do not give alkalies, the organic acids combine with the ammonia and the formation of urea is diminished.

In small children the course is rapid and the prognosis so bad, even in light cases, that no treatment is of avail. The so called oatmeal diet may be tried. For older children Lauritsen orders a diet free from carbohydrates and with a moderate amount of proteid. After two weeks gluten bread may be added. If the glucose does not reappear in the urine, this diet is continued for two years.

In moderately advanced cases the prognosis is fair, if the child can be kept in the hospital. He orders the oatmeal diet, first used by von Noorden in 1903, for a few days. This consists of American oatmeal, as gruel or porridge, butter, salt, eggs, tea or coffee, and a small amount of red wine. No meat or other carbohydrate should be given with this diet. He has never seen œdema or diarrhœa follow. Next he orders for from one to three days vegetables which are poor in carbohydrates, bacon, eggs, beef broth, coffee without cream, and soda water. Then he returns for a few days to the oatmeal diet, after which the carbohydrates can be gradually decreased and the fats increased.

In severe cases he follows the same principles in the diet, but greater care must be taken not to restrict it too suddenly, to avoid coma; in fact, it is safe to restrict the diet only after the urine has been rendered alkaline or faintly acid by the use of sodium bicarbonate. Finally, if the glucose does not disappear, he advises giving nothing but water for twenty-four hours. The consequent loss of weight is easily made up.

Obituary.

MIHRAN K. KASSABIAN, M. D.,
of Philadelphia.

Last week, in an editorial article, we referred to the untimely death of Dr. Kassabian from malignant disease imputed to the action of the Röntgen ray, with which he had for years been an indefatigable worker, largely before its dangers had been recognized and before means had been devised for reducing them to a minimum. We then recorded our appreciation of the value of his labors.

Dr. Kassabian, an Armenian, was a native of Asia Minor. He was forty-two years old at the time of his death. He came to the United States

MIHRAN K. KASSABIAN, M. D.
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in 1894, and in 1898 he entered upon the study of medicine in the Medico-Chirurgical College, of Philadelphia. When the war with Spain broke out he joined the Hospital Corps of the army, in which he served creditably. In due time he was graduated in medicine and became an instructor in electrotherapeutics and x ray work in the Medico-Chirurgical College. Subsequently he was made director of the Röntgen Ray Laboratory of the Philadelphia General Hospital. He was the author of an excellent textbook on *The Röntgen Rays and Electrotherapeutics*, the second edition of which was published only a short time before his death. He was highly esteemed by those who had the privilege of knowing him personally.

News Items.

Women to be Admitted to the Maryland Medical College.—With the opening of the fall term, women will be admitted to the classes of the Maryland Medical College on the same terms as men.

Tuberculosis in Cuba.—In a message recently submitted to congress President Gomez strongly urged that steps be taken to stop the spread of tuberculosis in Cuba. During the past ten years there have been 10,579 deaths from the disease in Havana alone, and 39,084 in the entire island.

New Equipment for the Wisconsin College of Physicians and Surgeons.—One thousand dollars is to be spent by the board of trustees of the Wisconsin College of Physicians and Surgeons in purchasing new equipment for the college. At a meeting of the heads of the different departments, held recently, it was decided to establish obstetrical clinics in one of the hospitals of the city.

The Richmond, Va., Academy of Medicine and Surgery held a regular meeting on Tuesday, July 12th. Dr. St. George T. Grinnan read a paper entitled The Value of Exercise in Infancy, and Dr. W. Brownley Foster, assistant secretary of the academy, read a paper on Infant Mortality. A general discussion followed.

The New Chief of Staff of the Army.—On July 19th Major General Leonard Wood assumed the duties of chief of staff of the United States Army, retiring from the command of the Department of the East, with headquarters at Governor's Island, to accept his new position. General Wood has just returned from the Argentine Republic, where he went as a special envoy to represent the United States Government at the celebration of the centenary of Argentine independence.

An Addition to the Woman's Medical College of Philadelphia.—Work will be started soon on a building to be erected in the rear of the college hospital, adjoining the college buildings. It will contain a clinical amphitheatre, which will seat one hundred and twenty-five students, with a waiting room for patients, sterilizing, etherizing and recovery rooms, a doctor's room, and a room for students. The structure will be two stories high, and will cost approximately $22,000.

The Cleveland, Ohio, State Board of Health.—At a recent meeting of the board Dr. William T. Miller, of Cleveland, was promoted from the vice-presidency to the presidency of the board, succeeding Dr. C. C. Crossland, of Zanesville, whose term had expired. Dr. Frank Warber, of Columbus, was elected vice-president, and Dr. C. O. Probst, of Columbus, was reelected secretary. On account of the increasing amount of work to be attended to it was decided that in future the board would meet bimonthly instead of quarterly.

A New Eye Hospital Opened in Philadelphia.—The Trachoma Institute, situated at 228 Pine Street, Philadelphia, which was established for the study and treatment of trachoma, as well as for a general study of eye diseases, was opened on July 18th. The new eye hospital will be nonsectarian and a free dispensary will be conducted for the treatment of eye diseases. A fully equipped laboratory for research has been installed. The hospital will endeavor to treat trachoma on the immigrant vessels where it is generally found and where light cases can be cured without deportation.

American Proctologic Society.—The twelfth annual meeting of this society was held in St. Louis, Mo., on June 6th and 7th, under the presidency of Dr. Dwight H. Murray, of Syracuse, N. Y. Officers for the ensuing year were elected as follows: President, Dr. George J. Cook, of Indianapolis; vice-president, Dr. Jerome M. Lynch, of New York; secretary-treasurer, Dr. Lewis H. Adler, Jr., of Philadelphia; executive council, Dr. Dwight H. Murray, of Syracuse, Dr. George J. Cook, of Indianapolis, Dr. Louis J. Hirschman, of Detroit, and Dr. Lewis H. Adler, Jr., of Philadelphia. The thirteenth annual meeting will be held in Los Angeles, Cal., in June, 1911.

Appreciation for Dr. Cheever.—At a meeting of the board of trustees of the Boston City Hospital, held on Thursday, July 14th, resolutions were adopted on the appointment as surgeon emeritus, after a term of service dating from the opening of the hospital, in 1864, of David William Cheever, M. D., LL. D., professor emeritus of surgery, Harvard Medical School. The resolutions spoke of Dr. Cheever's long, arduous, and devoted service, his skill as a surgeon, and his ability as a teacher, his careful and painstaking method of instruction, his patience with students, his remarkable clearness of diction, which have placed him in the foremost rank of clinical teachers.

The American Medical College, St. Louis.—Announcement is made by Dr. James Moores Ball, dean of the college, that Dr. Frederick A. Baldwin, professor of pathology and therapeutics at Baylor University College of Medicine, Dallas, Texas, has been appointed to the chair of pathology and clinical medicine in the American Medical College of St. Louis. Dr. Thomas G. Atkinson, until recently professor of nervous diseases in the Chicago College of Medicine and Surgery, has been appointed to the chair of neurology, and George M. Heath, B. S., Ph. C., formerly instructor in pharmaceutical chemistry in the University of Michigan, has been appointed professor of physics and physiological chemistry. This institution, which was recently reorganized and is now a regular medical school, will open its thirty-eighth annual session on September 6th.

Infant Mortality in Brooklyn.—In an effort to ascertain why the infant mortality during the summer months is so much greater in Brooklyn than it is in Manhattan, Health Commissioner Lederle recently appointed a special committee to investigate the matter and report on the various problems relating to infant mortality. This committee consisted of Dr. Louis C. Ager, Dr. John W. Parrish, Dr. Le Grand Kerr, and Dr. Archibald Smith. It is the belief of this committee that differences in the character of the soil and sewage provisions of Brooklyn and Manhattan are largely responsible for the greater mortality among infants in Brooklyn. Manhattan Island being nearly all rock the efficient disposal of the sewage is comparatively easy. A third important element, according to the report of the committee, is the fact that the agencies in Manhattan for the care of small children are so numerous and efficient that sick infants are quickly sent away and placed in the best surroundings for recovery.

Vital Statistics of New York.—During the week ending July 9, 1910, the deaths from all causes reported to the Department of Health of the City of New York numbered 1,472 corresponding to annual death rate of 16.29 in a thousand of population, as compared with a rate of 14.37 for the corresponding week in 1909. The annual death rate for the week in each of the five boroughs was as follows: Manhattan, 14.85; the Bronx, 16.08; Brooklyn, 17.66; Queens, 20.22; Richmond, 21.71. There were 119 stillbirths. The deaths of children under five years of age numbered 623; 438 under one year of age, 101 between one and two years of age, and 84 between two and five years of age. The deaths from diarrhœal diseases under five years of age numbered 280, over five years of age, 302. There were 23 deaths from sunstroke, 11 from suicide, 12 from homicide, and 79 due to accidents. Two thousand five hundred and twenty-one births and 1,184 marriages were reported during the week.

The Health of Chicago.—During the week ending July 9, 1910, the following new cases of and deaths from transmissible diseases were reported to the Department of Health of Chicago: Typhoid fever, 18 cases, 5 deaths; measles, 167 cases, 4 deaths; German measles, 6 cases, 0 deaths; whooping cough, 42 cases, 4 deaths; scarlet fever, 72 cases, 7 deaths; diphtheria, 82 cases, 9 deaths; chickenpox, 9 cases, 0 deaths; tuberculosis, 93 cases, 59 deaths; pneumonia, 5 cases, 63 deaths. Seven cases of contagious diseases of minor importance were also reported, making a total of 501 cases reported. The deaths, under two years of age from diarrhœal diseases numbered 104. There was one death from cerebrospinal fever, 6 deaths from sunstroke, and 29 deaths from congenital defects and accidents. The total deaths of children under five years of age numbered 229, of whom 157 were under one year of age. The total deaths from all causes, exclusive of stillbirths, numbered 581, corresponding to an annual death rate of 13.3 in a thousand of population, as compared with a death rate of 13.4 for the preceding week, and 11.2 for the corresponding week in 1909.

The American Public Health Association will hold its thirty-eighth annual meeting in Milwaukee, Wis., on September 5th to 8th. Invitations have been extended to representatives of the various national organizations working in the interest of public health to attend this meeting and discuss methods for the correlation of the work of such organizations and for cooperation, with a view to economy and increasing efficiency. Sanitary engineering will occupy a prominent place on the programme. This association is the oldest organization of its kind in the United States. Its membership extends over the Dominion of Canada, Mexico, and Cuba, as well as the United States. Further information concerning it may be obtained by addressing Dr. William C. Woodward, of Washington, D. C., secretary of the association. Other officers are: President, Dr. Charles O. Probst, of Columbus, Ohio; first vice-president, Dr. Charles A. Hodgetts, of Toronto; second vice-president, Dr. Ernest C. Levy, of Richmond, Va.; third vice-president, Dr. Federico Torralbas, of Havana, Cuba; treasurer, Dr. Frank W. Wright, of New Haven, Conn; chairman of the Laboratory Section, Dr. William R. Stokers, of Baltimore; chairman of the Section on Vital Statistics, Dr. W. H. Guilfoy, of New York; chairman of the Section of Municipal Health Officers, Dr. S. H. Durgin, of Boston; chairman of the Local Committee on Arrangements, Dr. G. A. Bading, 2511 Wells Street, Milwaukee.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Department of Health for the following statement of new cases and deaths reported for the two weeks ending July 16, 1910:

	July 9th		July 16th	
	Cases.	Deaths.	Cases.	Deaths.
Tuberculosis pulmonalis	452	149	542	181
Diphtheria and croup	418	36	298	24
Measles	434	12	344	21
Scarlet fever	177	15	149	10
Smallpox	..	..	..	..
Varicella	31	..	19	..
Typhoid fever	51	10	45	15
Whooping cough	48	15	20	8
Cerebrospinal meningitis	5	5	3	7
Total	1,616	242	1,420	266

Gifts and Bequests to Charity.—The will of Anna T. Jeanes, who died in Philadelphia, in September, 1907, contains the following bequests: Incorporated trustees of the Philadelphia Yearly Meeting of Friends for the establishment and assistance of hospitals and infirmaries, $250,000; for the establishment of a new general hospital for cancerous and nervous ailments, to be in charge of the joint committee of the Quarterly Meeting House for Aged and Infirm Friends, $200,000 and residue of estate; Women's Hospital, $64,000; West Philadelphia Hospital for Women, $10,000; Hahnemann Hospital, $10,000; Philadelphia Home for Incurables, $10,000; Women's Homœopathic Hospital, $10,000; Pennsylvania Hospital, $10,000; Pennsylvania Asylum for Widows and Single Women, $5,000; Home for Destitute Colored Children, $5,000; Home for Infirm and Aged Colored Persons, $5,000; Pennsylvania Society to Protect Children from Cruelty, $5,000; the Pennsylvania Society for the Prevention of Cruelty to Animals, $5,000; Red Bank Sanatorium Association, 5,000.

The will of Charles H. Armstrong, who died in Greenwich, Conn., about a month ago, contains bequests of $5,000 each to the Methodist Episcopal Hospital, Brooklyn, and to the Methodist Home for Aged People, Brooklyn.

By the will of Mrs. Isabella W. Talbot, of Billerica, widow of former Governor Thomas Talbot, of Massachusetts, the Boston Floating Hospital will receive $2,500, to be held in trust, and to be known as the Talbot fund, the income to be applied to the special use and benefit of the patients of the hospital. The Massachusetts General Hospital will receive $5,000 in trust, to be known as the Thomas Talbot fund, to be used for the maintenance of a free bed.

By the will of Henry Dexter, who died in New York on July 11th, St. Luke's Hospital will receive $100.

Personal.—Dr. Walter G. Frey, of Long Island City, has been appointed a medical officer of the Fire Department, to fill the vacancy caused by the death of Dr. Frederick A. Lyons on July 5th.

Dr. W. W. Hawke, chief resident physician at the Philadelphia Hospital for the Insane since May, 1903, has resigned to accept the position of superintendent of the State Asylum for the Insane at Warren, and his resignation has been accepted. Dr. J. Allen Jackson, of the Central Indiana Hospital for the Insane, Indianapolis, has been appointed to succeed Dr. Hawke.

Dr. William A. Howe, of Phelps, N. Y., has been appointed deputy commissioner of health of New York State, to fill a new position created by the last legislature. Dr. Howe has for some time been acting as director of the Division of Communicable Diseases and has had experience in public health work..

Dr. William J. O'Sullivan, of New York, has been appointed an assistant corporation counsel by Corporation Counsel Watson. Dr. O'Sullivan is a well known medico-legal authority.

Dr. Richard C. Eaton, of Wakefield, Mass., has been appointed second assistant physician to the Brattleboro, Vt., retreat.

Dr. H. P. Sights, of Paducah, Ky., has been elected superintendent of the Hopkinsville Asylum, to succeed Dr. W. T. Gardiner, who becomes a member of the Board of Control. Dr. Sights is at present health officer of Paducah.

Miss Edith N. Buckingham, of Boston, is said to be the first woman to receive the doctorate in zoology at Radcliffe. She has recently been doing research work under Dr. Mark, curator of the Harvard zoological museum.

The Alabama State Conference of Charities and Correction held its second annual meeting in Birmingham recently. An interesting feature of the programme was an address on the Great White Plague and What the Layman Can Do to Help Conquer It, by Dr. Charles L. Minor, of Asheville, N. C. Dr. John W. Abercrombie, president of the University of Alabama, and others discussed the education and assimilation of the emigrant, particularly the child, and emphasized the need for the segregation of the defective, criminal and feeble minded. Dr. G. D. Parke, of Birmingham, was elected president for the ensuing year. The meeting next year will be held in Mobile.

The Fifth International Congress of Obstetrics and Gynæcology.—This congress will be held in the Imperial Institute of Midwifery and Gynæcology, St. Petersburg, on September 22d to 28th, under the patronage of His Majesty, the Emperor of Russia. The Russian Committee on Organization, representing every part of the Empire, has effected an organization with Professor Dem. d'Ott, president; Professor P. Sadovski, secretary-general, and Professor H. Zamchine, treasurer. Among the other Europeans identified with the congress, and best known in the United States, are Döderlin, of Germany; Schauta and Mars, of Austria; Freiderich, Hubert, Charles, Jacobs, van Hassel and Henrotay, of Belgium; Meyer, Streiberg, Howitz, Paull, Kaarsberg and Laurizen, of Denmark; Fargas, of Spain; Richélot, of France; Macnaughton-Jones, of Great Britain; Treub, Nijhoff, Kouwer, Van der Hoeven, Mendes de Leon and v. Taussenbroeck, of Holland; Tauffer, of Hungary; Pestalozza, of Italy; Brandt, of Norway; Westermark, of Sweden; Beuttner and Betrix, of Switzerland. The special questions to be considered by the congress are: (1) Cæsarean Section, by Baum, Brandt, Doleris, and Routh; (2) Nonoperative Treatment of Cancer of the Uterus, by Mangiagalli, Betrix, and Meyer; (3) Comparative value of the Different Procedures in the Treatment of Displacements and Deviations of the Uterus, by Schauta, Westermark, and Hofmeier; (4) The Vaginal Route in Accouchement and Gynæcology, by Martin, Jung, Treub, and Wertheim; (5) Influence of the Nervous System in the Origin and Control of Uterine Hæmorrhages, by Macnaughton-Jones and others. In addition to the foregoing special contributions, individual essays embracing a wide range of subjects of greatest interest have been promised from over forty leading operators. Membership in the congress is restricted to members of the medical profession and scientists who are nominated either by the Russian Committee on Organization or by the respective National Foreign Committees which are appointed by the European Committee for that purpose and to serve as intermediaries between it and the members of the congress. The registration fee is $5.25 (including exchange), payable before the meeting to the chairman of the respective National Committee, through whom cards of admission and all information relative to the congress will be forwarded. Contributions to the programme are subject to acceptance by the Executive Committee of the congress, to which titles will be forwarded by chairmen of the respective national committees. A résumé of all communications accepted under the rules of the congress, if furnished by authors, will be translated and published in the different languages in advance of the meeting. All the modern languages will be permitted, but reports and discussions submitted in any one language will be translated into the other languages for publication in the Transactions. The Transactions will be sent free to all members of the congress, whether in attendance upon the meeting or not. The Committee for the United States consists of the following members: Dr. Charles A. L. Reed, of Cincinnati, chairman; Dr. Robert T. Morris, of New York; Dr. Howard A. Kelly, of Baltimore; Dr. Lewis S. McMurtry, of Louisville; Dr. Matthew D. Mann, of Buffalo, secretary. An interesting feature of the congress will be an exhibition, to which the Committee on Organization has invited exhibits from all parts of the world. These exhibits will include surgical instruments, modern and ancient; the equipment of laboratories, lying-in rooms, operating rooms, etc.; plans for obstetrical clinics and gynæcological wards of hospitals; portraits of medical men who have distinguished themselves in the field of midwifery and gynæcology, books on gynæcology and obstetrics, pharmaceutical preparations, etc. All exhibits must be in the hands of the committee not later than September 1st.

Pith of Current Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL.

July 7, 1910.

1. A Crusade against Syphilis and Gonorrhœa, By Frederic Henry Gerrish.
2. Hæmorrhage from the Kidney, By Paul M. Pilcher.
3. Individual Efficiency, By Francis P. Emerson.

1. A Crusade against Syphilis and Gonorrhœa.—Gerrish reviews our knowledge of syphilis and gonorrhœa. About syphilis, he remarks, authorities are agreed upon the following points: It is constitutional, affecting every organ and every tissue. It is either acquired or inherited. The first evidence of acquired syphilis (the initial lesion) is the chancre. The secondary manifestations of the acquired form, as well as the chancre, are powerfully infectious. The tertiary lesions, while not clinically infectious, have no tendency toward spontaneous cure, but always toward destruction of tissue. The cause of syphilis is either a microscopic parasite, *Spirochæta pallida*, or some microorganism in whose life cycle *Spirochæta pallida* is a phase. The acquired form is usually conveyed in sexual congress, and hence the disease is commonly called venereal; but in many cases it is communicated by immediate contact other than sexual, or through the intermediation of clothing, utensils, and other objects of common use among the individuals concerned. Probably five per cent. of cases are thus caused. The poisonous discharges of syphilis cease to be infectious in twenty-four hours, and in a fourth of this time, if dried; otherwise, the disease would be vastly more prevalent. If the acquired disease is treated early and properly, it is curable to this extent: First, that the patient can beget (or conceive) offspring who are not syphilitic; and, second, that in about three fourths of the cases the patient will have no tertiary manifestations; but it is impossible to predict with certainty the event in any given case—no guaranty of future immunity can honestly be given. Specific treatment needs to be continued vigorously at least two years, and one cannot be confident of the patient's ability to procreate nonsyphilitic children until two years have elapsed from cessation of treatment and after the last appearance of a syphilitic symptom. In properly treated cases the time from infection to the period of safe propagation of the species is five years. Doubt of diagnosis can be dissipated by repeated, thoroughly skillful examinations for the spirochæta. Gonorrhœa is commonly a local disease, but its poison occasionally enters the system and causes trouble at points far from its usual sites. Practically it is almost exclusively venereal in origin, and it is acquired only through contagion. In the male it attacks primarily the urethra, from which it may extend into the bladder, ureters, and kidneys, and to the free genital passages, the seminal vesicles and the testicles. In the female the same urinary track may be followed; but more frequently the genital passages are involved in the extension, the vagina, the cervix, the uterine body, the oviducts, from which the disease may travel to the pelvic peritonæum. It causes more deaths than does acquired syphilis, besides it greatly reduces capacity for work, and causes an enormous amount of hope-

less invalidism, especially in women. The infective material attacks the conjunctiva with especial virulence. The prevalence of gonorrhœa is enormous.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

July 16, 1910.

1. The Rôle of Pædiatrics in Preventive Medicine, By THOMAS S. SOUTHWORTH.
2. The Noguchi Serum Reaction for Syphilis as an Aid to Diagnosis in Eye Lesions, By ALBERT E. BULSON.
3. The Relation of Animal Experimentation to Our Knowledge of Plague, By GEORGE W. MCCOY.
4. The Filtering Cicatrix for Chronic Glaucoma with a Report of Cases in which Operation was Performed by the Method of Lagrange, By ALLEN GREENWOOD.
5. Anomalous Scarlet Fever. A Report of Three Epidemics, By WILLIAM THOMAS CORLETT and HAROLD NEWTON COLE.
6. Spontaneous Rupture of the Eyeball; a Phenomenon of Glaucoma, By E. C. ELLETT.
7. Lutein Extract in the Treatment of Diseased Menstruation and the Premature Menopause, By ELLICE MCDONALD.
8. The Relation of Stuttering to Amusia, By E. BOSWORTH MCCREADY.
9. The Treatment of Furunculosis, By JOHN BOWEN.
10. A Modified Extractor for the Removal of Varicose Veins of the Leg, By W. WAYNE BABCOCK.
11. Typhoid Fever in Milwaukee and the Water Supply, By THE JOURNAL'S SPECIAL COMMISSIONER.
12. A Case of Retrograde Puberty, Impotence, and Diabetes Insipidus Relieved by Suprarenal Cortex, By WILLIAM T. BELFIELD.
13. Syphilis in Insanity as Determined by the Wassermann Reaction, By C. D. ENSOR.
14. Preliminary Note on the Action of Ehrlich's Substance 606 on Spirochæta Pertenuis in Animals, By HENRY J. NICHOLS.
15. Bandage for Cone Shaped Surface, By MAYNARD C. HARDING.
16. The Relation of Mosquitoes to Filariasis in the Region of San Francisco Bay, By CREIGHTON WELLMANN, EDWARD VON ADELUNG, and FINLEY M. EASTMAN.

3. Animal Experiments and Plague.—McCoy says that in the past, by means of animal experimentation, there has been demonstrated the cause of plague, the means by which it is conveyed in nature from animal to animal, and from lower animals to man. At the present time we have effective means of controlling outbreaks of the disease, and of curing many of the sick. So much has been accomplished in the past that we may fairly hope that later investigations will still further extend our knowledge of the disease. The lines along which we may expect progress are as follows: The discovery of methods of rodent extermination more perfect than those we now have. The development of a prophylactic agent that could be used without inconvenience on a large mass of the population. The preparation of a curative serum, potent enough to make it useful even in late cases of the disease. The discovery of a reliable method of early diagnosis of human cases without awaiting the results of culture and inoculation experiments. This will probably be in the nature of a test similar to the ocular reaction in typhoid fever or the cutaneous reaction in tuberculosis. The circumstances governing the alterations of virulence of the bacillus. All progress in the directions indicated will have to come about as a result of experimental work done on lower animals.

5. Anomalous Scarlatina.—Corlett and Cole think that it is evident that what is known as scarlet fever varies greatly in its clinical manifestations. In a violent form it may cause death within a few hours, or in its mildest form it may be evanescent and difficult to recognize. As to the *materies morbi* which gives rise to scarlet fever we know nothing positively, nor of its mode of invasion. From the epidemics it would appear that the toxine varies in different outbreaks. From their observation it does not appear that mild infections beget malignant strains, or the reverse. Furthermore it should be remembered that in epidemics of a severe type atypical cases occur as frequently as in those of mild type. From the fact that the tonsils are involved at a very early stage, and from the constancy with which this symptom has been noted, it would seem that the infecting agent gains access through these glands, as asserted by Dawson and Lemoine. It seems unwise, therefore, with our imperfect knowledge concerning the ætiology of scarlet fever, to regard these aberrant forms, which point strongly to some aberration of the exciting cause, as distinct affections. In 1894 Duke endeavored to establish a "fourth disease" in the infectious exanthemata, but the consensus of opinion does not substantiate this claim. The authors' observations show that the most constant symptoms are the angina and slight nephritis, while an increase of cosinophiles in the blood was observed in a considerable number of their cases. Other phenomena are usually present even in atypical forms of the disease, but they are inconstant and subject to wide variation.

7. Lutein Extract and Menopause.—McDonald has for nearly five years experimented clinically with a desiccated extract of corpora lutea of the ovary of cows, obtained by skinning the outside of the ovary with a sharp knife in order to obtain as much of the essential substance as possible, drying, and powdering. The cow was chosen on account of the relatively large amount of lutein cells present. It was his intention to continue this study until one hundred cases had been treated and the results studied, when more definite conclusions might be formed and correct therapeutic indication decided; but the publication of an article by Morley, with conclusions contrary to our author's, led him to report this series of twenty cases. Morley, using the same product, supplied the lutein extract to ten physicians, who returned a report of eighteen cases to him. Fourteen were cases of surgical menopause, and one physician treated as many as five. It is needless to say that in a condition as obscure as the surgical menopause, as easily subject to spontaneous variations of condition, and as dependent on the individual verbal report as to the condition, this form of investigation is to be deprecated. The surgical menopause is a condition which time cures and psychotherapy may benefit. It is not to be expected that definite conclusions can be drawn from one case or therapeutic indications be discovered by five. He has treated in all twenty cases. Ten of these cases were of scanty menstruation or approaching premature menopause. Ten were cases of surgical menopause. McDonald thinks that the control of the surgical menopause need not be sought in the corpora lutea. Its value is in cases in which the uterus and ovaries or uterus alone are

retained. Particularly is it valuable in the treatment of scanty menstruation and the premature menopause. He has treated a number of cases at the outdoor dispensary of the Kensington Hospital for women, with extract of the whole ovary, and never saw any definite results therefrom. But the lutein extract, being the essential part of the ovary, does seem to help in some degree, and should be accompanied in suitable cases, by dilatation of the uterus, with the use of the stem pessary following operation, as advised by Manson. At least, the administration of lutein is indicated after operations on pregnant women in whom miscarriage is feared. This is particularly true in the early weeks of pregnancy, during the embedding of the ovum, as it has been shown experimentally that the corpus luteum has a definite effect under such circumstances.

8. **Stuttering and Amusia.**—McCready remarks that while incapable of proof, it is reasonable to suppose that the defective use of the muscles of inspiration, expiration, and of the lips, tongue, and throat, resulting in stuttering is the result of imperfect coordination, caused by disconnected and erratic discharges from the cortex. This incoordination is between the nervous mechanism controlling the acts of vocalization and articulation and the centres having for their function the appreciation and expression of melody and harmony, and is due to a biological variation in such a centre or its commissures. The cure of stuttering is only accomplished by a process of compensation brought about by the education of cells previously nonfunctionating, and by forcing the opposite hemisphere to supply a centre similar to that which is imperfectly developed. To this end the reversal of dexterity would seem to be a reasonable procedure.

11. **Typhoid in Milwaukee.**—See Miscellany, page 194.

MEDICAL RECORD.

July 16, 1910.

1. The Psychoneuroses: An Interpretation, By Joseph Collins.
2. Duodenal Alimentation, By Max Einhorn.
3. The Diagnosis of Suppurative Disease of the Nasal Accessory Sinuses, By Alfred Braun.
4. Drainage and Dressing of Wounds in Minor Surgery, By Archibald E. Isaacs.
5. Fistula in Ano; Excision and Suture, By E. C. Beck.
6. A Pith Ball Manometer, By Nathaniel Fedde.

2. **Duodenal Alimentation.**—Einhorn observes that, as is well known, there are frequently conditions in which the usual methods of alimentation (by mouth and stomach) are either impossible or undesirable. Rectal feeding has always been used in these cases before. Every clinician, however, knows how unsatisfactory this mode of nutrition is. The food is utilized only in a small degree, and, besides, the rectum often becomes irritable, so that the enemata must be stopped. It is therefore desirable to have some other way of feeding to the exclusion of the stomach. The duodenal pump, which usually serves the purpose of obtaining the duodenal contents, can also be used for the introduction of food into the duodenum. This kind of feeding may be designated as "duodenal alimentation." The method consists simply in introducing the duodenal pump into the digestive tract, and feeding is begun as soon as its end is in the duodenum. The apparatus is left in the digestive system for from eight to twelve days. The thin rubber tube does not inconvenience the patient, and thus everything is ready for the feeding. This is best done at intervals of two hours. After the feeding, water is forced through the tube, and finally air blown through and the stop cock is closed. We can introduce at one feeding between 240 and 300 c.c. of food slowly. All fluids must, of course, be used at body temperature. He has used this method of treatment successfully in three cases. Usually the following nutritive material was used every two hours, from seven in the morning until nine in the evening. Milk, 240 c.c.; 1 raw egg, sugar of milk, 15 grammes. The mixture well beaten up and injected at blood temperature. The patient received nothing by mouth. Two patients were given, besides, a quart of physiological salt solution by rectum, according to the Murphy drop method; the third patient also received water directly injected into the duodenum, but very slowly, drop by drop. None of the three patients lost any appreciable weight during the duodenal feeding. They felt very well, *i. e.*, the feeling of hunger was satisfied, and while without food they felt weak and tired, they felt well and strong after the duodenal feeding. At all events, the cases prove that good nutrition may be kept up (without loss of weight) for a longer period, without stomach feeding. The advantages of duodenal over rectal feeding are at once apparent; for while the rectum and colon are simply organs for the expulsion of fæces and for the absorption of possibly remaining liquids, we have to deal in the duodenum with an organ where the most important digestive juices are secreted. In the colon we have to do with the last part of the digestive tract, in the duodenum, however, with the principal part of the digestive apparatus, so that everything is here utilized.

5. **Fistula in Ano.**—E. C. Beck has operated in seventeen cases of fistula in ano. He describes his method as follows: The patient is admitted to the hospital on the day before operation and is well purged. He is allowed no solid food whatever, and his colon is thoroughly evacuated by enema one hour before operation. Anæsthesia is usually by ethyl chloride, as the operation is a short one, and the patient later on is the better for it. A probe is inserted into the canal and pushed through until it can be felt by the finger in the rectum. A grooved director is now slipped in over the probe. This is used because it is a more powerful instrument and will not bend when traction is exerted with it. Running the tip of the scalpel along the groove the tissues are slit open with one sweep. Be sure to cut through the sphincter at right angles and it will reunite perfectly. Have the wound surfaces spread well apart and carefully remove all scar tissue in view with a sharp, blunt pointed scissors. If in doubt rather cut away a little too much than not enough. Pay particular attention to the internal end of the wound. When all the offending tissue has been removed paint the whole surface over with tincture of iodine. The scanty bleeding can easily be controlled by sponging. Great care must be exercised in bringing the severed tissues together closely and accurately. For suturing material he

uses silk worm gut and finds it excellent for this purpose. The first suture is placed at the inner angle of the wound. The edges of the gut and sphincter are brought together with mouse toothed forceps and a generous bite taken with the needle. A strong needle is imperative. Be sure you get enough tissue with your suture, as it will form a cushion when you exert pressure and will tend to keep the wound surfaces closely approximated. Sometimes it is necessary to make the suture for the sphincter an extra one, especially in those cases in which the fistula opens fairly high up in the gut. Leave the ends of the suture long, clamp it, and let them hang down out of your way. Sew up the rest of the wound in like manner, placing a stitch about every half inch and burying your needle deeply each time. Leave all the ends long, and when you have finished carry them all to one side and fasten them to the buttock with adhesive plaster. This will prevent irritation of the parts and add to the comfort of the patient. When the operation is completed a T binder is applied. The patient is kept on his back and in bed, and his peristalsis held in check for at least four days by the administration of bismuth and opium. Only such nourishment is given as will leave the least amount of residue. When the patient begins to complain of cramps and colic his bowels are evacuated by means of an oil enema. He is usually allowed to go home at the end of the seventh day. At the end of ten days all sutures are removed excepting the innermost one, which should remain for two weeks to insure a perfect result. Seventeen of the eighteen patients were discharged fully cured.

BRITISH MEDICAL JOURNAL.

July 2, 1910.

1. Treatment of Chronic Bright's Disease, By W. P. Herringham.
2. The "Pancreatic Reaction" in Abdominal Disease, By William Russell.
3. On the Results of the "Pancreatic Reaction" and on the Diagnostic Value of an Analysis of the Fæces in Diseases of the Pancreas, By P. J. Cammidge.
4. Gallstones: Acute Pancreatitis: Recovery, By Charles E. Salter.
5. Case of Impacted Gallstones in Cystic Duct. Operation: Recovery, By Claud F. Fothergill.
6. A Case of Dermatitis Artefacta, and its Sequel, By R. O. Adamson.

2, 3. The Pancreatic Reaction.—Russell remarks that a positive Cammidge reaction may be obtained from the urine of persons in good health; that it may be obtained from the urine of persons suffering from a great variety of abdominal disorder or disease; that it may be present in other diseased conditions; that it may be present when autopsy shows that the pancreas is not the seat of any anatomical change. All this to the physician and to the pathologist definitely excludes pancreatitis as the cause of the Cammidge reaction. That the reaction is a reliable guide to the condition of the pancreas has not been borne out by his observations; in fact, they seem to negative such a contention. Even putting pancreatitis out of account, it might still be contended that the substance found in the urine was absorbed from the pancreas; but the pancreatic enzymes are proteid substances, and the substance in question is a carbohydrate. But even were such absorption the source of the substance, we should require to recognize that the absorption took place in so many different conditions, is so variable in amount, and so apparently erratic in the times of its appearance, that its presence as an aid to abdominal diagnosis is entire negligible, and if depended on may be wholly misleading. —Cammidge reports the records of 1,500 samples of urine derived from 1,475 cases. The cases he divides into eight groups: 1. Acute pancreatitis, all thirteen cases gave a positive pancreatic reaction. 2. Chronic pancreatitis; *a*, associated with gallstones or malignant disease, fifty-six per cent., 149 of 264 cases, gave a positive reaction; *b*, secondary to intestinal disease and gastric or duodenal ulcer, 403 cases, 211 (fifty-two per cent.) gave a positive reaction; *c*, associated with disease of the heart, vessels, or lungs, six cases, all of them gave a positive reaction; *d*, secondary to metastatic deposits, of ninety-two cases, thirty-four (thirty-seven per cent.) gave a positive reaction. 3. Pancreatic calculi, of four cases three gave a positive reaction. 4. Pancreatic cysts, of four cases two gave a positive reaction. 5. Pancreatic infantilism, one case gave a positive reaction. 6. Malignant disease of the pancreas, of seventy-three cases of cancer of the pancreas, twenty-four (thirty-three per cent.) gave a positive reaction. 7. Miscellaneous, of 467 cases 461 gave a positive reaction. 8. Normal, none of fifty cases gave a positive reaction.

LANCET.

July 2, 1910.

1. The Cerebrospinal Fluid, By F. W. Mott.
2. The Behavior of the Leucocytes in Infection and Immunity, By F. W. Andrewes.
3. The Pelvic Conditions Resulting from the Slighter Forms of Puerperal Sepsis and Their Treatment, By Sir William J. Sinclair.
4. The Tuberculous Gland: Its Significance and Treatment, By R. W. Philip.
5. The Administration of the Public Health and Education Acts in Relation to the Prevention and Cure of Diseases of the Throat and Nose, By T. Jefferson Faulder.
6. Points in Favor of Early Operation in Appendicitis, By Arthur H. Buck.
7. A Note on the Distribution of Treponema Pallidum in Congenital Gummata, By Ernest Albert Shaw.
8. Notes on Some Obscure Cases of Extrauterine Gestation, By T. B. Broadway.
9. Poor Law Medical Reform: What It Should Aim at, By Major Greenwood.

1. The Cerebrospinal Fluid.—Mott, in his first Oliver-Sharpey Lecture says that the cerebrospinal fluid is a fluid *sui generis*, for its physical and chemical properties are different from those of any other fluid in the organism; it approaches in its composition most nearly the sweat and the tears. The normal fluid is clear, like water. The specific gravity is from 1.006 to 1.008. The cryoscopic point of the fluid is from -0.51° to -0.56° C.—that is to say, the temperature of congelation is very near that of blood (-0.56° C.). It is, practically speaking, devoid of all corpuscular elements and it contains only traces of protein matter, becoming only very slightly turbid on heating. It is alkaline in reaction, the alkalinity being only one half that of the blood. Calculated in percentages of sodium hydrate it varies slightly in different animals, and in man in different pathological conditions within very narrow limits. There is no correspondence between the alkalinity

and the rate of flow of the cerebrospinal fluid; but in as much as an acid substance is probably formed as a result of activity of the nervous centres it is possible that after normal sleep the alkalinity may be slightly greater than at the end of a day's work. Various analyses show that the principal constituent is sodium chloride, but it also contains traces of carbonates, bicarbonates, phosphates, urea, and dextrose. It is probable that the phosphates, bicarbonates, and carbonates contain relatively more potassium than the salts of the blood, for it has been shown that the ash of the brain in contradistinction to the ashes of all other tissues contained from 20 to 30 per cent. of potassium against 15 per cent. sodium salts. There is present also glucose, varying from 1.2 to 2.5 per mille. As to gases Mott remarks that it would appear that carbon dioxide as well as oxygen and nitrogen are present. The composition of the fluid is against it being a transudation from the blood or a lymphatic secretion, and the following facts prove this conclusion: 1. It contains 0.02 per cent. of proteins against 7 per cent. in blood plasma; 2. it contains 0.02 per cent. of proteins against 4.5 per cent. in body lymph; 3, there is an absence of lipochrome; 4, there are no leucocytes in the normal fluid; 5, in enteric fever there is absence of agglutinins; 6, it has no hæmolytic action on the blood corpuscles of other animals; 7, it contains no alexins. Mott then shows that the choroid plexus in the human subject secretes the fluid. It escapes from the fourth ventricle into the subarachnoid space by the foramen of Majendie and the foramina of Laschka. The fluid having escaped into the subarachnoid space fills up all the spaces, cracks, and crevices; at the base of the brain, therefore, it is more abundant than on the convexity; it forms what are termed lakes, rivers, and rivulets (cisterna and flumina). The quantity of fluid contained in the subarachnoid space, ventricles of the brain, and central canal of the spinal cord is about from 100 c.c. to 130 c.c., and there is every reason to believe that this fluid is continually being secreted. But the fluid cannot be continually secreted and not flow away. According to one view, it escapes along the lymphatics of all the cranial and spinal nerves, thus reaching the receptaculum chyli and thoracic duct, passing through the paravertebral lymphatic glands in its passage, and eventually, therefore, arriving in the venous circulation, and it finally escapes into the venous blood by the capillaries. It comes into relation with the nerve cell elements and therefore may be the ambient fluid in which exchanges take place between the blood in the capillaries and the neurones, it may function as the lymph of the brain.

4. **The Tuberculous Gland.**—Philip advises to watch for the earliest indication of spreading involvement of lymphatic glands in young children. Especially have regard to distribution downward from the extratonsillar gland into the supraclavicular triangle, and regard such process as almost certainly of tuberculous nature. If in doubt make use of the tuberculin test (cutaneous or percutaneous). Treat as soon as may be with tuberculin, while at the same time carefully cleansing the throat and correcting the child's faulty environment. If incidentally one or other gland suppurates, evacuate in simple fashion, continuing the use of tuberculin. There is ample reason for the statement that if such procedure is followed the glandular disturbance will commonly yield, grosser deformity will become rare, and, what is vastly more important, the risk of the spread of tuberculous infection to internal organs will be greatly lessened.

LA PRESSE MÉDICALE.

April 2, 1910.

1. Pain in the Heel and Subcalcaneous Exostoses, By Paul Reclus.
2. Ambulatory Treatment of Fracture of the Femur, By Savariand.
3. Union of Fracture of the Leg, By Léon Imbert.
4. Myasthenia Gravis, By Cesare Frugoni.
5. Pathology and Treatment of Mucomembraneous Enterocolitis, By Maurice de Langenhagen.

2. **Ambulatory Treatment of Fracture of the Femur.**—Savariand speaks of the great inconvenience to a patient to spend at least sixty days in bed with a fractured femur. To overcome this condition he has introduced an ambulatory treatment, which can be used in fractures at the lower third or half of the femur.

April 6, 1910.

1. Basedow's Disease and Pregnancy, By E. Bonnaire.

1. **Basedow's Disease and Pregnancy.**—Bonnaire has observed two cases of pregnancy complicated with exophthalmic goître, one in a tertiopara, the other in a primipara; the women were delivered at term; the one had no sequelæ, while in the other dilatation of the right heart, exophthalmus, and enlarged thyreoid, persisted. It is a rare occurrence, only three cases were found in 45,000 women.

April 9, 1910.

1. Thymectomy, By Victor Veau and Eugene Olivier.
2. Clinical Signs of Enlargement of the Thymus, By D'Oelsnitz.

1. **Thymectomy.**—Veau and Olivier describe their technique for extirpation of the thymus in hypertrophy of this organ. They have performed the operation in four cases with good results, which experience together with that of other surgeons demonstrates the facility, the harmlessness, and the good results of thymectomy. But there is another question in the hypertrophy of the thymus which still has to be solved and that is: how can a hypertrophied thymus be diagnosticated and what are the operative indications?

April 13, 1910.

1. Local Anæsthesia and Major Operations, By Chaput.
2. Cancer Metastasis by Retrograde Invasion of the Lymphatics, By Emile Gérandel.

1. **Local Anæsthesia and Major Operations.**—Chaput has lately performed thirty-seven major operations under local anæsthesia. Among these were twenty-five laparotomies, one amputation each of an arm and of a breast, one resection each of the wrist, the shoulder, and the superior maxilla, etc. He injects large doses of novocaine, 1 in 400, with adrenalin, with large needles, from a large syringe, at each step of the operation.

April 16, 1910.

1. Syphilis Malformation, By P. Delbet.
2. Posology of Sodium Benzosulphone Paraaminophenol Arsenate, By F. Balzer.
3. Serodiagnosis of Syphilis, By C. Levaditi and A. Latapie.
4. Pathogenic Treatment of Nervous Parasyphilitic Affection (Tabes and General Paralysis), By A. Sézary.

2. Sodium Benzosulphone Paraaminophenol Arsenate. — Balzer remarks that five centigrammes of hectine contain one centrigramme of arsenic. It is readily soluble in water, and is quickly eliminated. He has used it with and without mercury, when it is called hectargyre. The dose of hectine is 1 c.c. of a 0.1 per cent. solution, and of hectargyre, 20 to 30 drops daily of a 0.1 per cent. solution.

3. Serodiagnosis of Syphilis.—Levaditi and Latapie report the results of experiments with the Wassermann reaction at the Pasteur Institute of Paris. The test was applied to 821 persons in 1909, and the results were positive in ninety-two per cent. of syphilitics of less than two years, in sixty-three per cent. of over two years, and negative in eighteen nonsyphilitics. They were also positive in twenty per cent. of paretics, and in sixty per cent. of tabetics.

April 20, 1910.

1. Albumin Reaction of Sputum, By H. Roger and Lévy-Valensi.
2. Typical Lymphadenia, By A. Clerc.

1. Albumin Reaction of Sputum.—Roger and Lévy-Valensi say that the presence or absence of albumin divides the expectorations into two large groups. The one is the group in which the sputum does not show albumin, the expectorations are due to a more or less abundant secretion of the bronchial mucus, originating from a simple bronchitis, acute or chronic, or from a pulmonary emphysema. The other, with albumin, indicates a deeper process, the secretion comes from an inflammation or exudation, and excludes simple bronchitis. While the absence of albumin excludes tuberculosis its presence does not demonstrate it. The sputum is collected in dry receptacles, must be as free from saliva as possible and never contain blood. It must be fresh, in winter sputum can be kept for twenty-four hours, but a temperature of 37° C. splits the mucin and liberates albumin. The sputum thus collected is mixed with an equal amount of water, stirred, and coagulated by adding a few drops of acetic acid. This is the difficult part of the examination as an excess of the acid will prevent coagulation, while insufficiency will not collect all the mucus. It is difficult to indicate the exact amount as the quantity varies from one case to another. The mixture is then filtered, which process should not take more than two minutes. The filtered mass is then examined for albumin; there is no special method for this procedure, and any of the methods used in uranalysis may be used. The authors prefer heat or potassium ferrocyanide.

April 23, 1910.

1. Experimental Research on Acute Poliomyelitis, By C. Levaditi.
2. Atypical Lymphadenia, By A. Clerc.
3. Sympathetic Aches and Hyperæsthesia of the Stomach, By Loeper and Esmonet.
4. Fracture of the Base of the First Metacarpal Bone, By Silvio Rolando.
5. Serotherapeutics and Vaccination against Acute Articular Rheumatism, By Georges Rosenthal.

April 27, 1910.

On Amputations, By Henri Hartmann.

LA SEMAINE MÉDICALE.

April 6, 1910.

General Syndromes in the Pathology of the Blood, By P. Emile Weil and A. Cleri.

April 13, 1910.

Multiplicity of Anatomical Pathological Changes in Grancher's Form of Pulmonary Congestion, By J. Sabrazès.

April 20, 1910.

Characteristics of the Venous Jugular Pulse in Asystole of the Left Heart, By L. Bard.

April 27, 1910.

Tuberculosis among the Jews, By L. Cheinisse.

MEDIZINISCHE KLINIK.

June 26, 1910.

1. A Psychic Epidemic among Physicians, By A. Hoche.
2. Nystagmus, By St. Bernheimer.
3. Indications and Technique of the Extraperitoneal Cæsarean Section, By Strempel.
4. Clinical and Anatomical Contribution to the Pathogenesis of the Visceral Syphilitic Fever, By Hermann.
5. Pathological Fixation or Pathological Changes of Position of the Abdominal Organs and the X Ray Diagnosis, By C. B. Schuermayer.
6. The Treatment of Nervous Impotence, By E. Kantorowicz.
7. A Case of Total Gastrectomy for Cancer, By Haeberlin.
8. The Appendix in Gynæcological Laparotomies, By Fritz Weisswange.
9. Contribution to the Functional Testing of the Pancreas, By Staniek.

2. Nystagmus.—St. Bernheimer reports a case in which a man, twenty-eight years old, consulted him because he had occasionally observed that when he shut his left eye his vision became bad and he had an uncomfortable feeling which he could not define exactly. Binocular examination showed perfect vision with 0.75 of hypermetropia, accommodation, muscle balance, color sense, and light sense normal. The fundus was normal and there was no astigmatism. When either the right or the left eye was covered with the hand or any other opaque object, or when the vision of the other eye was interfered with by the interposition of a strong convex or concave glass, a horizontal nystagmus of both eyes commenced immediately and continued until binocular vision was permitted again. With each eye alone the vision fell to 0.2 or 0.3 under the influence of the nystagmus and Jaeger No. 5 could be read only with difficulty, although with both eyes vision was perfect and Jaeger No. 1 could be read with ease. Repeated examinations at various intervals gave the same results. The patient seemed to have no organic or general disease. He had some neurasthenic symptoms, the cause of which could not be determined. He had had an attack of syncope after severe exertion during military manœuvers. The various causes of nystagmus are discussed by the writer, who is inclined to think that in this case the nystagmus was purely cortical and excited psychically.

4. **Clinical and Anatomical Contribution to the Pathogenesis of Visceral Syphilitic Fever.**—Hermann reports the case of a man, born in 1871, who had suffered from nervous symptoms and disease since childhood. No syphilitic history could be obtained. He came under observation in May, 1909, when he presented the symptoms of a severe attack of visceral syphilis, which are described in minute detail. On autopsy he was found to have been suffering from hypertrophic syphilitic splenitis with miliary gummata, diffuse gummatous infiltration of the liver with parenchymatous degeneration of that organ, and sparsely disseminated gummata in the mesenteric glands, the lungs, and the submucosa of the intestines.

8. **The Appendix in Gynæcological Operations.**—Weisswange urges that when the abdomen has been opened to perform a gynæcological operation it is best to remove the appendix, unless entirely obliterated, as a precaution against a future attack of appendicitis. He urges that this indication is clear to all when the appendix can be seen to be diseased, but that when it appears healthy macroscopically it is impossible to say that more or less serious changes are not present, that he believes chronic constipation to be the cause of most attacks of appendicitis, that the majority of men and women have appendicitis at some time during their lives, and that the removal of an apparently healthy appendix when opportunity offers is a proper prophylactic precaution.

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT.

June 21, 1910.

1. The Present Position of Aural Surgery, By Heine.
2. Pantopon, By Sahli.
3. The Influencing of the Medium Condition of Fullness of the Lungs in Health, By Forschbach and Bittorf.
4. Tuberculin Immunity, By Hamburger and Monti.
5. The Diagnosis of the Colossal Retroplacentar Hæmatoma, By Mayer.
6. The Method of Infection and the Course of Pneumococcus Meningitis, By Grober.
7. Tuberculosis and Breast Nursing, By Deutsch.
8. The Question of the Ability to Nurse, By Fock.
9. Zahn's Method of Detection of Tubercle Bacilli, By Mende.
10. Foreign Bodies in the Intestine in a Hernia as the Cause of Serious Complications, By Fabian.
11. Bilateral Tubal Pregnancy, By Suessmann.
12. Instruments and Apparatus for Serodiagnostic Studies, By Koch.
13. A New Apparatus for the Penetration of the Body by Heat Currents (Diathermia), By Dessauer.
14. The Treatment of Erysipelas with Hot Air, By Jerusalem.
15. Robert Koch, By Fraenkel.

1. **Aural Surgery.**—Heine reviews the present position of aural surgery and concludes that although a great number of otitic brain diseases, which formerly led almost without exception to the death of the patients, are cured by operative treatment, yet there still remains a very large percentage which we cannot cure. These cases warn us that every suppuration of the middle ear should be considered a serious disease and care should be exercised not to let the right time for an operation slip by.

4. **Tuberculin Immunity.**—Hamburger and Monti state that there are two kinds of insensitiveness to tuberculin, one dependent on an incapacity for reaction produced by the absence of the excessively sensitive antibodies, the other, which should be looked upon as a true tuberculin immunity, due to the presence of true antitoxines.

6. **Method of Infection and Course of Pneumococcic Meningitis.**—Grober reports two cases of pneumococcic meningitis; the first was one in which the infection came from an existing pneumonia, in the second the infection seems to have entered through a fractured skull.

7. **Tuberculosis and Breast Nursing.**—Deutsch says that in tuberculosis nursing very rarely exerts a favorable influence upon the mother, but usually an unfavorable, sometimes a deleterious influence, while labor and child bearing in the widest sense does not appear to promote healing or a standstill of phthisis. The children of the tuberculous mothers that were nursed by them were all infected, while the rest of the children, who were not so nursed, escaped.

GLASGOW MEDICAL JOURNAL.

June, 1910.

1. Color Perception and Other Visual Functions in Their Practical Aspects, By Freeland Fergus.
2. Myxosarcoma of Upper End of Tibia—Osteomyelitis of Lower End of Tibia, By J. Grant Andrew.
3. Epilepsy in Some of Its Gynæcological Aspects, By W. J. Rutherfurd.

1. **Color Perception.**—Fergus speaks of color perception in seamen, and states that a seaman who can infallibly and in all conditions of weather identify a port light and a starboard light, that is a green and a red light, is quite safe for purposes of navigation. The difficulty has chiefly arisen from the matter being looked at purely from a laboratory point of view. It is not a laboratory experiment in a certain department of physiology, namely, in the department of the perception of color about which so little is known, but it is a question as to whether a given man can determine three different lights, namely red, green, and clear. Supposing a candidate is required to distinguish three different notes as to pitch, such as a high note, a low note, and one about half way between the two, would it be reasonable to ask him to have the knowledge of tone which is requisite to tune a violin? That is practically what is demanded of the modern sea officer in relation to color. Probably the height of fanaticism was reached in the matter when an edict was passed that not even a stoker in the English navy was to be engaged whose color sense was defective. The report of the Royal Society's committee was based entirely on the Young-Helmholtz theory of color perception. Now, the truth is that color perception is only a thing which can be known immediately, and about the physiology of which we know little or nothing. The most recent researches of which we are aware are the very interesting observations of Dr. Burch, to be found in the *Journal of Physiology* (xxii). A very large number of persons who are congenitally color blind are perfectly able, and that without the slightest hesitation, to distinguish the three sensations given to them by red, green, and clear light. Probably all congenitally color blind people have this power so long as their light sense is good.

EDINBURGH MEDICAL JOURNAL

June, 1910.

1. Local Recurrence after Removal as a Sign of Malignancy in Tumors of the Female Mamma, By Sir George Thomas Beatson.
2. On the Treatment of Acute Gonorrhœal Urethritis in the Male by Passive Hyperæmia, By Alexander Miles.
3. Two Cases of Volkmann's Ischæmic Contracture, By David M. Greig.
4. Relapse in Cerebrospinal Meningitis, with Notes on a Case Treated by Serum and Vaccines, By John Ritchie.
5. The Training of Teachers in Hygiene, By W. B. Drummond.
6. The Influence upon Vision of the Increasing Yellow Coloration of the Lens, By W. G. Sym.
7. Résumé of Recent Literature on the Development of Intrathoracic Surgery, By James Lochhead.

2. Treatment of Acute Gonorrhœal Urethritis.—Miles describes the apparatus used by him in the Bier treatment of acute gonorrhœal urethritis. It consists of a glass cylinder about seven inches long and two inches in diameter, closed at one end, and with a small lateral tube near the blind end. Over the open end is fitted a conical rubber flange with a thick rubber ring, like an umbrella ring, let into its narrow free edge. This thickening of the margin of the flange is of importance in rendering the apparatus airtight. The bell is exhausted through the lateral tube by means of a metal pump attached to a short piece of stout rubber tubing, over which an ordinary clamp is slipped to occlude the tube after the air has been withdrawn. After the patient has passed water, the flange is applied around the penis as far back as possible, care being taken to retract the hair so that it is not included in the constricting ring. An elastic band is then applied over the flange to ensure close apposition with the skin. The bell is now passed over the penis, the wide (forward) end of the flange slipped over it, and the air is withdrawn by the aspirating syringe, and the tube clamped. Three or four strokes of the piston usually produce a sufficient vacuum. The penis at once becomes turgid, swollen, and bluish in color, the appearance being comparable to that of the organ in a state of priapism—after a spinal injury. If there is even a moderately profuse discharge, some drops of pus exude from the meatus. The proper amount of suction causes no pain or discomfort; if pain is produced the vacuum is excessive, and some air should be allowed to enter by slightly relaxing the clamp. In from ten to fifteen minutes the clamp is removed, and air allowed to enter the bell, and after an interval of five minutes it is again exhausted. This is repeated two or three times, the whole séance lasting about an hour. The bell is applied once daily. *Results.*—From an experience of over 300 cases of acute gonorrhœa of the anterior urethra treated by this method, he concludes that it is more cleanly than that by injections, and that the patient can more easily be instructed to carry it out safely and efficiently for himself. It is a further advantage that the method is available in cases of phymosis, in which the œdema of the prepuce precludes the use of injections. If the objection is raised that it occupies a whole hour every day, one would reply that the average patient is just as likely to be able to devote this time to it as to find favorable opportunities of regularly administering injections three times in the day.

DUBLIN JOURNAL OF MEDICAL SCIENCE.

June, 1910.

1. Notes on a Case of Acute Leuchæmia, By T. Gillman Moorhead.
2. A Further Note on a Case of Splenomedullary Leuchæmia treated by X Rays, By Maurice R. J. Hayes.
3. The History of the Prevention of Smallpox, By T. Percy C. Kirpatrick.
4. Radical Operation for the Cure of Umbilical Hernia, By J. Singleton Darling.

Proceedings of Societies.

ASSOCIATION OF AMERICAN PHYSICIANS.

Twenty-fifth Annual Meeting, held in Washington, D. C., May 3, 4, and 5, 1910.

The President, Dr. Henry Hun, of Albany, in the Chair.

The President's Address.—The President said that by death the association had lost one from each of its classes of membership—emeritus, Dr. Andrew H. Smith; active, Dr. Wharton Sinkler; and honorary, Dr. J. Allison Scott. It seemed to him that this was a fitting time to look back over a quarter of a century and seek for some suggestions to guide the association's future and to judge how fully they had been able to fulfill that inspiring prophecy of Dr. Delafield, made at the first meeting, when he said: "We want an association composed of members each one of whom is able to contribute something real to the common stock of knowledge. We want a society in which we can learn something, to which we may come year after year with the well founded hope that at each meeting we shall find something to learn." Membership in the association to-day still remained a high honor and privilege, to be obtained only by scientific achievement. The wise selection of a long list of worthy candidates was a difficult and disagreeable task. But good men must be selected and less fit men rejected, in spite of the promptings of friendship or of self interest. Their membership was now practically full and there was a long waiting list. An increase in membership would certainly render the programme problem, already acute, even more difficult. They had been no less successful in their scientific work than in their selection of members. With a membership of active investigators, naturally, many papers were offered each year, and this was an expression of the vigorous life of the association. Dr. Hun was convinced that the following was necessary: (1) To limit the contributors to actual members, unless in very exceptional cases; (2) to have the essentials of each paper presented in as brief an abstract as was compatible with clearness; (3) to promote full discussion; and (4) to extend the meeting over sufficient days or sessions to permit of the presentation of every paper offered. The special charm had not lain in the scientific programme, but in the inspiration it had often received from a few intimate words with the great leaders of the profession and in the conversations held with colleagues working in the same or allied fields in different parts of the country. The social side of the meetings was of great influence and value. Washington had grown so large during the last

quarter of a century, and presented so many distractions, that they lost touch with their members in these days; and it was for this reason that he hoped the experiment might be tried of holding their meetings occasionally in Atlantic City, where they could live together under the same roof and be in constant communication with each other.

The Ætiology of Subacute Infective Endocarditis.—Dr. E. Libman and Dr. H. L. Celler, of New York, presented this paper. During the past eight years they had had the unusual opportunity of making studies in forty-three cases of subacute infective endocarditis. In thirty-six of the forty-three, blood cultures were made during life. Of the forty-three cases, twenty-nine were since 1906, and this showed that the disease was now being more frequently recognized. The duration of their cases varied from four months to a year or a year and a half. In nearly all the cases the disease began insidiously. Fever was present in all the cases. Malaise and gastric or intestinal disturbances were frequently present; sweats occurred in nearly all the cases. In all the cases there were progressive weakness and emaciation. The spleen was nearly always enlarged and palpable. Pains were quite a constant feature. In some cases they were localized in the bones, joints, or muscles; in others they seemed to be neural in origin. Mild joint swellings were not infrequently met with. At times the pains were due to the development of embolic aneurysms. The painful erythematous cutaneous nodules seemed to be pathognomonic. A symptom to which no attention had been paid was the tenderness of the lower part of the sternum that was present in nearly all their cases. The progressive anæmia of the disease and the color of the face were noteworthy features. None of the patients recovered, and autopsies were performed in nineteen cases. In fifteen of these blood cultures had been made during life. The lesion was vegetative in type, not ulcerative. When the aortic valve was involved, there was a marked tendency for the process to spread down and attack the wall of the ventricle, the ventricular surface of the aortic flap of the mitral valve, and the chordæ tendineæ. If the mitral valve was involved, the process spread over the wall of the left auricle and involved the chordæ tendineæ. The latter were often torn. In ten cases the mitral valve alone was implicated; in all of these there was auricular endocarditis. In two the aortic valve alone was involved. Both valves were affected seven times. In six of these auricular endocarditis was present. It was evident that the lesion of the auricle practically always occurred when the mitral valve was involved. As a rule the vegetations in this disease contained innumerable organisms. Altogether, 103 examinations were undertaken; in thirty-five cases they found the atypical cocci; in one case they found the influenza bacillus. The number of colonies found varied; in one case only two colonies were found in 25 c.c. of blood. The largest number was 500 in a c.c. As a rule the organisms could be found after forty-eight hours. It was advisable to use both fluid and solid media.

They had investigated nineteen strains of pneumococci, sixty-nine of streptococci, and twelve of *Streptococcus mucosus*. The organisms were isolated from local infections in various parts of the body. Their investigations led them to the following conclusions: 1. The type capsule of the pneumococcus and that of the *Streptococcus mucosus*, as described by Buerger, were diagnostic. All organisms presenting such capsules were dissolved by bile. 2. Solution by bile was diagnostic of the pneumococcus and the *Streptococcus mucosus*. This latter organism was easily distinguishable by its type of capsule and certain other features. 3. The absence of precipitation spoke almost absolutely against an organism being a streptococcus. 4. The fermentation of inulin was not of pathognomonic value. While it was a feature of the pneumococcus, the property might be absent, and, furthermore, streptococci occasionally gave a positive result. 5. The ring colonies were diagnostic of the pneumococcus. 6. The growth in blood plates gave the following results: (*a*) A definite, large, perfectly clear zone about a colony was diagnostic of streptococci if it was found to persist in several generations. Incomplete clearing was of no diagnostic value, nor was a linear clearing. The clearing might occur in concentric rings. (*b*) Pneumococci always grew green. An organism not producing a green color always proved on further study not to be a pneumococcus.

The conclusions they arrived at in the study were based on the following findings: 1. Type capsules were found on all nineteen pneumococci studied, either in the original material obtained from the patient or in cultures. All the organisms were dissolved by bile. Type capsules were found on all the strains of the *Streptococcus mucosus*. Of sixty-nine ordinary streptococci, thirty-two had capsules. 2. All of the streptococci precipitated. In one this was slightly marked, but was intense after passing through a mouse. Of nineteen pneumococci, only two precipitated; these two had been in bile and did not precipitate in the second generation. Of twelve strains of the *Streptococcus mucosus*, one precipitated for four generations and one for two generations. 3. Of nineteen pneumococci, all fermented inulin except two; with these two a slight result was obtained by passage through two mice. The strains of the *Streptococcus mucosus* all fermented rapidly. Of the sixty-nine streptococci, two fermented inulin: one lost the property in the second generation and also after passage through a mouse. The other lost the property after passage through two mice. 4. On blood media, all but eleven of the streptococci grew in fine gray colonies surrounded by an absolutely clear zone. Of the eleven exceptions, seven gave a good white, moist growth without any clear zone, three grew green like the pneumococcus, and one gave only a slight, almost colorless dry growth with no clearing.

The cocci found in the cases of subacute and chronic infective endocarditis during the past few years were all Gram positive; they had never been found to have a capsule. They were either round, ovoid, lancet shaped, or bacillary in form, and might be found in diplococcus form, in groups, or in chains. The important point to be brought out was that up to the present time whenever they had found the organism which they had usually called

endocarditis cocci *par excellence* there was always present an infection of the endocardium. In no other disease had they found the organisms in the blood current. They, therefore, seemed to have a diagnostic import. Their studies on the bacteriology of the blood now comprised over 3,000 blood cultures made in the last twelve years.

Dr. Francis P. Kinnicutt, of New York, understood Dr. Libman to say that the results of the blood cultures determined the prognosis in cases of acute infective endocarditis; if this was so, it was a useful means.

Dr. James B. Herrick, of Chicago, asked Dr. Libman what proportion of the cases gave a history of valvular lesions having preceded the endocarditis; also, what relation the organism he described bore to the so called organism of rheumatism.

Dr. Frank Billings, of Chicago, said that his experience with cases of chronic infective endocarditis agreed with that of Dr. Libman in regard to the clinical course and fatality. Last year they reported fifteen cases of this type, and since then about ten more. The disease was more prevalent than commonly supposed. It was frequently mistaken for malaria, for subacute rheumatism, for typhoid fever, and, most commonly, for tuberculosis. He did not think that a positive diagnosis could be made without taking a blood culture. So far as he knew, no patient had recovered, certainly none had of the twenty-five or more he knew of.

Dr. E. C. Rosenow congratulated Dr. Libman upon the splendid character of his work and was sure that they were dealing with the same disease. During the first years of his work he thought that he was dealing with the *Streptococcus pyogenes;* further studies, however, had convinced him that he was not dealing with the streptococci, but with a modified pneumococcus.

Dr. F. Forchheimer, of Cincinnati, thought that an enormous step forward had been made in the recognition of this disease. He had seen a large number of cases which clinically would be considered under the head of this form of endocarditis; but from what had been said evidently they were not dealing with the same form of disease. The work that had been done by the German observers must be gone over again if what they had learned was true.

Dr. E. Libman said that one should expect a fatal outcome in every case in which the organism he described was found. In all the cases that he had observed the disease had been superimposed upon previous cardiac disease. He could not answer Dr. Herrick's question regarding the relationship of this organism to the so called organism of rheumatism. The condition had been superimposed, however, upon an endocarditis of rheumatic origin, as well as upon other diseases, especially arteriosclerosis. The disease must be diagnosticated by cultural tests.

The Commoner Types of Functional Cardiac Murmurs.—Dr. William S. Thayer, of Baltimore, said that during the past seven years he had been especially interested in studying cardiac murmurs in individuals who appeared to be perfectly normal, and in conclusion he urged the following: (1) That a cardiac murmur was but one, and sometimes an unimportant one, of the links in the chain of evidence leading to the recognition of disease of the heart. (2) That certain cardiac murmurs were present normally in a large proportion of healthy young people. (3) That the common forms of these murmurs were: (*a*) The basic systolic murmur, heard best in the third left interspace, and often all over the area in the recumbent posture. This murmur disappeared in the erect posture or on full respiration. (*b*) The systolic murmur, sometimes limited to the apex, sometimes heard all over the cardiac area in the recumbent posture, disappearing in the erect posture. (*c*) The cardiac respiratory inspiratory murmurs. (4) That the commoner functional murmurs, those heard in healthy individuals, should be carefully distinguished from those other murmurs which might arise at various orifices without actual valvular disease; but, nevertheless, as a result of pathological changes in the heart muscle or in the blood. The anæmic murmurs, the murmurs systolic and diastolic, dependent upon weakness of the heart muscle. (5) That a familiarity with the cardiac murmurs common in the normal individual was at least as important as an acquaintance with those murmurs which were associated with cardiac disease.

Dr. Henry Sewell, of Denver, said that a reduplication of this sound of the heart would be heard especially in cases of venous congestion; when there was a high liver pressure of blood, there was to be found almost invariably a reduplication of the sound.

The Clinical Significance of Transitory Delirium Cordis.—Dr. A. W. Hewlett, of Ann Arbor, and Dr. George Henry Fox, of New York, presented this communication. By transitory delirium cordis was meant a transitory but extreme irregularity of the heart, during which the auricular waves disappeared from the venous tracings. The paroxysms might be excited by exhaustion, vomiting, exertion, or excitement, or they might come on without apparent cause. In two patients the paroxysms occurred after operations. The heart might be absolutely negative on physical examination between attacks, and the diagnosis of a nervous condition made. However, as five of the six patients ultimately had the permanent form of irregularity with cardiac insufficiency, the prognosis should be guarded. They had seen six of these cases and the number of paroxysms varied greatly in each case. In some they had been observed at least a year and a half before the pulse became permanently irregular. The duration of each paroxysm was from only a few minutes up to twenty-four hours and even longer. Five of the six patients reported acquired the permanent phenomenon.

Dr. Joseph H. Pratt, of Boston, had under observation a case of this type, and he wished to emphasize the fact that such cases might be readily mistaken for cardiac neuroses. His patient was sixty years old, and had never had any shortness of breath, but he was of a very nervous temperament. He had had six or seven attacks since last October. Between the attacks he felt perfectly well, except for his nervousness. Anybody who saw him and examined him by the ordinary methods would regard this as a case of cardiac neurosis.

Dr. Walter B. James, of New York, said that in his study of 150 cases with cardiograms, he was left with the impression that arrhythmia formed a very important group of cases which had not been subdivided satisfactorily. There was no question whatever but that a great number of these cases depended upon an irregular auricular fibrillation. The use of the electric cardiograph was the only way to determine whether this was the case or not. Auricular fibrillation was necessarily associated with permanent irregularity of the heart. He reported one case of acute lobar pneumonia in which, during the patient's convalescence, he had an irregular heart which one could not diagnosticate by the ordinary clinical methods. The electric cardiograph, however, showed a definite fibrillation of the auricle. During his convalescence this irregularity was lost and he left the hospital an ordinary normal individual. What observations he had made showed that the classification of irregularities of the heart was not at all satisfactory.

Dr. Richard C. Cabot, of Boston, asked in regard to the ages of the patients.

Dr. Isaac Adler, of New York, said he had seen quite a number of the cases just described, but he had had no experience with the use of the electric cardiograph. He reported a method of testing clinically these cases without having to resort to the use of this instrument. The majority of these cases were purely nervous, and the irregularity of the heart improved on exercise; the blood pressure also rose. In those cases, on the other hand, which depended upon any disease of the heart muscle, the orthodiascope would show that, after exercise, the blood pressure would decrease, but the arrhythmia would not disappear.

Dr. Hewlett agreed with Dr. James in regard to the impossibility of giving a definite classification of this particular form of irregularity of the heart. One should be a little cautious about giving a prognosis in these cases. Often a very insignificant operation was sufficient to bring about a paroxysm. Most of the patients were above the age of forty years.

(*To be continued.*)

Book Notices.

[*We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.*]

Klinischer Beitrag zur Frage der Alkoholpsychosen. Von Dr. Wilhelm Stöcker, Assistenzarzt der psychiatrischen Klinik zu Erlangen. Jena: Gustav Fischer, 1910. Pp. 298.

The general fate of the alcoholics treated in the psychiatric clinic at Erlangen has been carefully followed for the past ten years. The histories of the cases have been kept up to date and are here analyzed with considerable acumen, giving us an extremely valuable contribution to the alcoholic question, particularly as a clinical and statistical contribution to the therapeutic results of institution treatment of alcoholics.

The author found shortly after starting his study that many of the patients who had been thought to be suffering from alcoholic psychoses were really suffering from other forms of mental disorder, and that the alcoholism was purely accidental, and had nothing in common with the ætiology of the psychosis. The question therefore arose, Was the original alcoholic picture the beginning, and the alcohol the causative, or at least the loosening factor, or was the alcoholic abuse an episode, or only the exterior of a mental malady already in existence, and, further, was the alcoholic abuse only a symptom of another disease? Such problems are imminent in the work of neurologists and alienists, and only the careful sifting of material observed over long periods of time can enable them to be answered satisfactorily.

The author devotes considerable space to the discussion of the antecedent factors and the special rôle played by alcohol in psychiatry, especially in the making of psychopathic inferiors, in the production of actual psychoses, in starting other psychoses, and more particularly to alcoholism itself as a psychotic symptom. In passing it may be noted that Stöcker is inclined to minimize the rôle played by alcohol in inducing psychoses, other than those of distinctly alcoholic type, and, further, that in the majority of cases alcoholism is not only the expression of a psychopathic inferiority, but must also be regarded as a symptom of a definite underlying psychosis.

The alcoholics who have been studied have been divided into groups according to these psychoses, and the author has divided his clinical material under five heads, as follows:

(1) Epilepsy as a foundation of chronic alcoholism. (2) Manic Depressive Psychoses. (3) Dementia Præcox. (4) Other Psychoses and Psychopathies. (5) Indefinite Cases.

His casuistics cannot here be discussed, for they are too full even for a summary, but they develop the main feature already spoken of.

This is a valuable monograph, and should receive wide reading. There is all too much careless diagnosis in psychiatry. The alcoholic group is particularly difficult. With this work, and the recent one by Graeter on the relations of alcoholism and dementia præcox, alienists are in possession of two very valuable helps in a very difficult field.

Jahreskurse für ärztliche Fortbildungen. Herausgeber: Staatsrat Prof. von Bruns (Tübingen), Geh. Medizinalrat Prof. E. Bumm (Berlin), Excellenz Wirkl. Geh. Rat. Prof. Erb (Heidelberg), Hofrat Prof. von Gruber (München), Prof. von Noorden (Wien), Geh. Medizinalrat Prof. von Strümpell (Wien), und der Redakteur: Dr. D. Sarason (Berlin). München: J. F. Lehmann's Verlag, 1910. (Price, for each year, 16 Mark.)

These *Jahreskurse* will appear in monthly instalments, each part a review for a certain branch during the past year. These specialties were thus divided: January, biology; February, diseases of the circulatory and respiratory system; March, diseases of digestion, blood, and metabolism; April, diseases of the sexual and urinary systems and dermatology; May, nervous disease and psychiatry; June, pædiatrics; July, obstetrics and gynæcology; August, general therapeutics; September, orthopædics; October, infectious diseases, hygiene, and bacteriology; November, surgery, accidents, legal medicine; December, diseases of the eye, ear, nose, and throat.

Six numbers have so far appeared, and they con-

tain a good review of the progress of medicine during the past year. We do not know whether each monthly issue can be bought separately; if so, it would be a decided gain for the general practitioner, for whom these issues will be of special value.

Medical Men in the Time of Christ. By Robert N. Willson, M. D. Philadelphia: The Sunday School Times Company, 1910. Pp. 157.

To appreciate and understand the doctor of Christ's time, it is necessary to outline the development of the medical profession from antiquity. This the author has attempted to do. He thus speaks of the medical knowledge among the Egyptians, Phœnicians, Assyrians, and Babylonians; he mentions the materia medica of the Indians, the Greeks, and the Hebrews; and we are thus finally brought up to the time of Christ. Luke, the physician, and the Master Physician are both treated in two separate chapters. The book will make very interesting reading, combining both instruction and pleasure.

Education in Sexual Physiology and Hygiene. By Philip Zenner, Professor of Neurology in the Medical Department of the University of Cincinnati. Cincinnati: The Robert Clarke Company, 1910. Pp. viii-126. (Price, $1.)

The author remarks in his preface that this book is intended "as a message from a physician to the people." The first three chapters of the book give some talks by the author with school children and college boys; in the following chapters the author instructs teachers how to impart sex knowledge to children; while in the final chapter he develops his ideas of sex education.

Anwendungsformen und Wirkungsweise der Hydrotherapie bei den Verdauungs- und Stoffwechselkrankheiten. Von Ernst Tobias, Berlin. Halle a.S: Carl Marhold, 1910. Pp. 53.

Hydrotherapeutics has of late years made such progress that it is not astonishing to see a leaflet appear which treats of its use in disease of the digestive organs and of metabolism. Under diseases of the digestive system we find disturbances in the œsophagus, the stomach, the intestine, the peritonæum ,and the liver. Under the heading of metabolic disturbances the author speaks of obesity, gout, and diabetes mellitus.

MEDICOLITERARY NOTES.

The recent argument at Reno has a lesson or two for the profession. We read that the physicians, whose certificate of condition was required by the laws of Nevada to be obtained by each contestant before the fight could proceed, pronounced Jeffries to be "the most perfect physical specimen they had ever seen." Jeffries was practically *hors de combat* after the third round and only a kindly consideration for the owners of the moving pictures apparently induced Johnson to prolong the contest. The error of the physicians was due to the impossibility of examining the nervous system of the defeated pugilist. Endurance is a question of nervous energy, and it seems that at a certain age, generally about thirty-five years, but varying with the individual, the supply either fails or is diverted to other purposes in the economy than the ability to give and take punishment.

* * *

The only chance for a middle aged person of genial habits to win a fight is to win quickly, and this the marvellous "science" of Johnson rendered impossible to his opponent. Johnson seems now to be alone in his chosen field, but we confess to a desire to have some disciple of Horace Fletcher, a boxer, of course, "take him on."

* * *

The project recently mooted to have a couple of puddles in Central Park for the use of children in which to swim and wade would surely result in an outbreak of malaria among the residents adjacent to the park. The mosquito eating goldfish could not live in such water, and the use of oil would render the pools unattractive, to say the least. That the majority of the Fifth Avenue and Central Park West residents are absent during the summer is not a sufficiently strong countervailing argument. If no sense of the fitness of things interferes with the plan to metamorphose the nature of the great playground, we may look with tolerable confidence to the board of health.

* * *

Curiously enough, there is no connection between autoinfection and speed mania.

* * *

A piece of verse in a recent number of *Harper's Weekly* makes babies rhyme with rabies. This ought to forfeit the poetic license. It reminds us, however, that popular usage rhymes cocaine and ptomaine with pain, ignoring the fact that they are trisyllables.

* * *

Dr. Henry C. Rowland has The Offender in the August *Cosmopolitan;* he is the well mannered and evening dress burglar confined, as far as we have been able to observe, to fiction, but his adventures are entertaining. Hereward Carrington, having found that an exclusive diet of fruit agrees with him, wishes everybody to cast out all other articles from his dietary. Dr. Hobart P. Shattuck, of Tucson, protests against the recent article on vivisection by Mrs. Wilcox; his letter seems to us to be unfairly discounted by the editorial comment. Little Boy is a short story from the practised pen of J. J. Bell, in which a Dr. Stark helps to bring about a charming dénouement.

* * *

Some of the sensational newspapers have been exploiting recently a new proprietary "cure" for cancer. Legitimate commercial enterprise ceases at this point and the newspaper proprietor is *particeps criminis* in this cruel and barefaced gulling of the most unfortunate of human beings. Newspaper owners are men of education and are perfectly aware that there is no cure for malignant disease and that it is a deliberate swindle to publish advertisements of any claims of the kind. We read not long ago an editorial in which the writer innocently debated the question of whether the newspaper was losing its power over public opinion.

* * *

In spite of the large number of fake institutes pretending to cure cancer that have been put out of

business by the post office, a new one, evidently heavily backed by capital, has been started near New York. Apparently the main reliance of this concern is on a compound of vegetable alteratives. Prolonged medication of this kind will undoubtedly dissipate some fibroids and certain other benign tumors, including the tuberculous. The menace of such concerns is that the patient makes his own diagnosis after perusing the "literature," and, if he is afflicted with a malignant growth, valuable time is lost and the surgeon is called too late. The only cancers ever cured by quacks are those we have heard characterized with an evil smile by one of them as "nonmalignant cancers."

* * *

The merchants of Broadway seem to feel that they have at last overreached themselves in the matter of scintillating signs in the heavens and are anxious for an agreement that no more go up. We can reassure some fearful people on one point; no matter how numerous these gay advertisements become, they will cause neither astigmatism nor retinitis. They are an injury only to good taste. They might lead to a general chromophotophobia which would be an artistic calamity.

* * *

Current Literature for July, under the heading The Bacteriologist Who Revolutionized Medicine, has a sympathetic review of the career of the late Robert Koch. It also presents a photograph of the American representatives at the Hague, in which we are pained to note that only one official has his trousers properly ironed, *i. e.,* Mr. Elihu Root.

* * *

Why does a laboratory worker, who never sees a sickbed, prefer to call himself a "clinical pathologist"?

NEW PUBLICATIONS.

Woman's Medical College of Pennsylvania. Catalogue and Sixty-first Annual Announcement. June, 1910. Pp. 64.

Bulletin of the Tulane University of Louisiana. Medical Department and Department of Pharmacy. 1909-1910. Announcement for 1910-1911. Pp. 86.

Rush Medical College. Sixty-eighth Annual Announcement. Pp. 99.

Tuberculosis Work in Buffalo. What has been Accomplished in its First Year by the Buffalo Association for the Relief and Control of Tuberculosis. Including also Some Recommendations and Plans for the Future, with a Statement of its Collections and Disbursements. First Annual Report, May 17, 1909, to March 15, 1910, with Second Annual Report of Day Camp. Pp. 62.

Aerztliche Fortbildungskurse der freien Organisation für die medizinischen Kurse an der k. k. Universität Wien. Berlin und Wien: Urban & Schwarzenberg, 1910. Pp. 92.

The Twentieth Annual Report of the Eye, Ear, Nose, and Throat Hospital, New Orleans, La. For the Year ending December 31, 1909. Pp. 76.

Price List of Messrs. Hance Brothers & White, Philadelphia. Containing Price Changes, Additions, and Corrections. Pp. 336.

Mortality Statistics. Ninth Annual Report, 1908. Department of Commerce and Labor, Bureau of the Census, E. Dana Durand, Director. Washington: Government Printing Office, 1910. Pp. 705.

Ehrlich, Paul; Krause, Rudolf; et al.—Enzyklopädie der mikroskopischen Technik. In Verbindung mit Prof. Dr. E. Ballowitz, Prof. C. Benda, Prof. A. Bethe, et al. Zweite, vermehrte und verbesserte Auflage. II. Band: L—Z, und Autoren Register. Mit 111 Abbildungen. Berlin und Wien: Urban & Schwarzenberg, 1910. Pp. 680.

Ringleb, Otto.—Das Kystoskop. Eine Studie seiner optischen und mechanischen Einrichtung und seiner Geschichte. Lehrbuch für Aerzte und Studierende. Mit 98 Textfiguren. Leipzig: Dr. Werner Klinkhardt, 1910. Pp. x-194.

Hutchinson, Sir Jonathan.—Syphilis. New and Enlarged Edition. With Twelve Colored and Twenty-four Black and White Plates. New York: Funk & Wagnalls, 1910. Pp. xxiv-583.

Ricketts, T. F.—The Diagnosis of Smallpox. Illustrated from Photographs by J. B. Byles, M. B., B. C., F. R. C. S., D. P. H. With Twelve Colored Plates, 110 Black and White Plates, and Fourteen Charts. New York: Funk & Wagnalls Company, 1910. Pp. xiv-154.

Wickham, Louis, and Degrais.—Radiumtherapy. Translated from the French by S. Ernest Dore, M. A., M. D., M. R. C. P. With an Introduction by Sir Malcolm Morris, K. C. V. O. Illustrated with Twenty Colored Plates and Seventy-two Figures in the Text. New York: Funk & Wagnalls Company, 1910. Pp. xx-306.

Rosenheim, Th.—Die Erkrankungen der Flexura sigmoidea. Halle a.S.: Carl Marhold, 1910. Pp. 78.

Giles, J. Edward, Duel, Arthur B., and Smith, Harmon.—Nursing in Diseases of the Eye, Ear, Nose, and Throat. By the Committee on Nurses of the Manhattan Eye, Ear, and Throat Hospital. Assisted by John R. Shannon, M. D., and John R. Page, M. D. With Chapters by Herbert B. Wilcox, M. D., and Eugenia D. Ayres. Philadelphia and London: W. B. Saunders Company, 1910. Pp. 281. (Price, $1.50.)

Box, Charles R.—Post Mortem Manual. A Handbook of Morbid Anatomy and Post Mortem Technique. London: J. & A. Churchill; Philadelphia: P. Blakiston's Son & Co., 1910. Pp. xi-335. (Price, $2.40.)

Miscellany.

Typhoid in Milwaukee.—The special commissioner concludes his report on Typhoid Fever in Milwaukee and the Water Supply, which appeared in the *Journal of the American Medical Association* for July 16, 1910, by saying:

The history of typhoid fever in Milwaukee shows first a period of very excessive prevalence (1869-1874). The introduction of a public water supply improved conditions greatly. This usually happens when shallow wells are abandoned for a large body of water. In spite of the improvement, however, the typhoid rate remained excessively high (over 30) for a period of twenty years. Then in 1895 the water intake was extended 6,000 feet further out into the lake. The result was an immediate drop in the typhoid rate to about one half. Slowly, however, the growth of the city asserted itself by an increasing volume of sewage poured into the lake and a consequent increased contamination of the water supply. In the present year (1910) the typhoid rate promises to be as high as before the extension of the water intake. No other probable source of a large amount of typhoid fever has been discovered and there can be little if any doubt that the public water supply is responsible for the present outbreak. When millions of gallons of sewage are discharged into a lake a few miles from a water intake it needs no divining rod to detect the possibilities of danger. No fact in epidemiology is more clearly established than that sewage contaminated drinking water is a cause of typhoid.

Military Hospitals of Ancient Rome.—Dr. Haberling in the *Deutsche Militärische Zeitschrift* (through the *Military Surgeon*, July, 1910), says that during the time of the Roman republic the soldiers were treated in tents or when possible were taken to the nearest large city, where they were often lodged in the houses of the wealthy and distinguished citizens. The investigations in Carnuntum show that hospitals existed in the time of Augustus, when a standing army had encamped near the boundary of the Roman Empire. The hospitals as far as they could be reconstructed were

conveniently and substantially built in the rear of the camp, and had a large garden in the centre. From the writings of many of the old authors it may be concluded that they had physicians who went with the troops and treated the minor ailments and slightly wounded and also physicians for the hospitals. During Cæsar's time medical men were attached to troops and served as private soldiers. It may be safely stated that the Romans had well constructed hospitals and a well trained sanitary personnel for the nursing and care of wounded soldiers.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of and deaths from cholera, plague, yellow fever, and smallpox were reported to the surgeon general of the United States Public Health and Marine Hospital Service during the week ending July 15, 1910:

Place.	Date.	Cases.	Deaths.
Smallpox—United States.			
California; general	May 1-31	17	
Colorado	June 1-30	68	
Connecticut	June 1-30	None.	None.
Kansas	May 1-31	304	1
Kentucky	June 26-July 2	1	
Louisiana	June 26-July 2	12	
Massachusetts	June 1-30	7	
Michigan	June 1-30	312	1
Missouri	June 26-July 2	5	
Nebraska	June 1-30	3	
North Dakota	June 1-30	20	
South Carolina	June 1-30	16	
Tennessee	June 26-July 2	5	
Wisconsin	June 1-30	37	
Smallpox—Foreign.			
Argentina—Buenos Aires	Feb. 1-28		70
	Mar. 1-31		71
Brazil—Para	June 12-18	8	2
Brazil—Pernambuco	Apr. 16-30		46
Brazil—Santos	May 22-29		6
China—Hongkong	May 15-21	1	
Egypt—General	May 7-13	80	15
Egypt—Suez	May 21-27	1	
France—Paris	July 12-18	8	
India—Bombay	May 25-27		38
India—Madras	May 28-June 3		1
India—Rangoon	May 22-28		8
Italy—General	June 13-19	1	
Italy—Naples	June 13-19	6	1
Java—Batavia	May 22-28	1	
Mexico—Aguascalientes	May 19-25		5
Mexico—Mexico	May 29-June 4		3
Mexico—San Luis Potosi	June 12-18	1	
Portugal—Lisbon	June 12-18	28	
Russia—Libau	June 6-12	24	1
Russia—Moscow	June 5-11	25	6
Russia—Riga	June 5-18		37
Russia—St. Petersburg	May 28-June 11	56	31
Siberia—Vladivostok	Apr. 22-28	1	
Spain—Barcelona	June 14-20		2
Spain—Vigo	June 12-18		1
Straits Settlements—Singapore	May 15-21	4	1
Uruguay—Montevideo	Apr. 1-30	162	64
Cholera—Foreign.			
India—Calcutta	May 15-21		58
India—Negapatam	May 1-6		10
India—Rangoon	May 22-28		2
Java—Batavia	May 22-28	5	3
Java—Samarang	May 22-28	1	
Straits Settlements—Singapore	May 15-21	8	12
Yellow Fever—Foreign.			
Brazil—Manaos	June 5-11		2
Brazil—Para	June 12-18	9	6
Plague—Foreign.			
Egypt—Alexandria	May 24-June 8	2	1
Egypt—Port Said	June 14	2	
Egypt—Assiout	May 26-June 16	11	7
Egypt—Assouan	Apr. 30-June 8	2	1
Egypt—Beni Souef	May 27-June 12	6	5
Egypt—Galioobeeh	May 21-June 5	4	
Egypt—Garbieh	May 14-June 14	13	4
Egypt—Fayoum	May 28-June 16	16	10
Egypt—Kena	May 27-June 15	23	21
Egypt—Menouf	May 24-June 13	83	13
India—Bombay	May 25-June 7		211
India—Calcutta	May 15-21		78
India—Rangoon	May 22-28		30
Persia—Bouchir	May 15-21		6
Straits Settlements—Singapore	May 15-21	1	1
Trinidad	July 14	1	

Public Health and Marine Hospital Service:

Official list of changes in the stations and duties of commissioned and other officers of the United States Public Health and Marine Hospital Service for the seven days ending July 13, 1910:

BIERMAN, C. H., Pharmacist. Granted ten days' leave of absence en route to station.

BREADY, JOHN E., Acting Assistant Surgeon. Granted twenty-seven days' extension of annual leave from June 2, 1910, on account of sickness.

COBB, J. O., Surgeon. Leave for seven days from June 25, 1910, amended to read three days from June 26, 1910.

CONVERSE, GEORGE M., Acting Assistant Surgeon. Granted seven days' leave of absence from July 11, 1910, under paragraph 210, Service Regulations.

CREPIN, H. E., Acting Assistant Surgeon. Granted seventeen days' leave of absence from July 5, 1910.

CUMMING, HUGH S., Passed Assistant Surgeon. Directed to proceed to Ocean City, Md., and Chincoteague, Wachapreague, and Cape Charles City, Va., for the purpose of making an examination of the keepers and surfmen of the Life Saving Service.

ELDREDGE, M. B., Pharmacist. Granted three days' leave of absence from July 5, 1910, under paragraph 210, Service Regulations.

FALK, C. C., Acting Assistant Surgeon. Granted ten days' leave of absence from July 6, 1910.

FOSTER, A. D., Passed Assistant Surgeon. Relieved from duty at Hong Kong, China, and directed to proceed to San Francisco, Cal., reporting arrival to bureau by wire.

FOX, CARROLL, Passed Assistant Surgeon. Granted seven days' leave of absence from July 9, 1910, under paragraph 191, Service Regulations; directed to proceed to Point Pleasant, N. J., for the purpose of making an examination of the keepers and surfmen of the Life Saving Service; granted seven days' leave of absence from July 16, 1910.

HORNING, HENRY, Acting Assistant Surgeon. Granted seven days leave of absence from July 6, 1910, under paragraph 210, Service Regulations.

ILTIS, G. W., Pharmacist. Granted seven days' leave of absence from July 1, 1910, under paragraph 210, Service Regulations.

LAGRANGE, J. V., Pharmacist. Granted seven days' leave of absence from July 9, 1910, under paragraph 210, Service Regulations.

LAVINDER, C. H., Passed Assistant Surgeon. Granted three days' leave of absence, en route in Europe, under paragraph 189, Service Regulations.

MAGRUDER, G. M., Surgeon. Granted one month's leave of absence from July 8, 1910, on account of sickness.

MASON, WILLIAM C., Acting Assistant Surgeon. Granted nine days' leave of absence from June 23, 1910.

PORTER, J. Y., Quarantine Inspector. Directed to make inspections of certain quarantine stations of Florida from time to time during present season.

SCHUG, F. J., Acting Assistant Surgeon. Granted fifteen days' leave of absence from July 9, 1910.

STERNS, C. O., Pharmacist. Granted one day's leave of absence in June, 1910, under paragraph 210, Service Regulations.

STIMPSON, W. G., Surgeon. Directed to proceed to Tuckerton and Atlantic City, N. J., for the purpose of making an examination of the keepers and surfmen of the Life Saving Service.

STONER, G. W., Surgeon. Granted four days' leave of absence from July 3, 1910, under paragraph 189, Service Regulations.

STIER, CARL, Pharmacist. Granted one day's leave of absence, June 16, 1910, under paragraph 210, Service Regulations.

Appointment.

Claude C. Cannon appointed a pharmacist of the third class.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending July 16, 1910:

ASHBURN, P. M., Major, Medical Corps. Will report to the commanding general, Department of California, for assignment to duty at the camp of instruction at Atascadero, Cal.

Barney, Charles N., Major, Medical Corps. Assigned to duty as inspector instructor at encampment of Connecticut Militia at Niantic, Conn., July 18 to 23, 1910.

Boyer, Perry L., Captain, Medical Corps. Granted thirty days' leave of absence on surgeon's certificate of disability, with permission to apply for fifteen days' extension.

Dean, Elmer A., Major, Medical Corps. Left Fort George Wright, Washington, en route to camp at American Lake, Washington.

De Laney, M. A., Captain, Medical Corps. Granted two months' leave of absence.

Edger, B. H., Jr., Major, Medical Corps. Left Fort Meade, S. D., en route to Fort D. A. Russell, Target and Manœuvre Reservation.

Fauntleroy, P. C., Major, Medical Corps. Left Fort Benjamin Harrison, Indiana, en route to Camp Douglas, Wis.

Foster, George B., Jr., Lieutenant, Medical Corps. Will report to the president of the Army Medical School, Washington D. C., for a continuation of the course of instruction in that school.

Harris, Herbert I., Lieutenant, Medical Reserve Corps. Now at Gettysburg, Pa., will report in person to the commanding officer of the camp of instruction at that place for temporary duty, and upon the completion thereof will revert to a status of absence with leave.

Harris, Jesse R., Captain, Medical Corps. Relieved from treatment at Army General Hospital, San Francisco, Cal., and will return to his proper station; returned to Fort George Wright, Washington, from treatment at the Army General Hospital, San Francisco, Cal.

Hathaway, L. M., Captain, Medical Corps. Ordered to proceed from San Francisco, Cal., to the Presidio of Monterey, Cal., for station and duty.

Hopwood, Lucius L., Captain, Medical Corps. Assigned to command of the one half of Company B, Hospital Corps, camp of instruction at Loon Springs, Texas, and at Atascadero, Cal.

Howell, W. O., Lieutenant, Medical Reserve Corps. Relieved from duty at the Presidio of San Francisco, Cal., and ordered to Scofield Barracks, H. Ty., for duty.

Knox, Howard A., Lieutenant, Medical Corps. Left Fort Hancock, N. J., with the Tenth Cavalry en route to camp of instruction, Pine camp, N. Y.

Marietta, S. H., Lieutenant, Medical Reserve Corps. Left Fort Des Moines, Iowa, with troops C. and D., Sixth Cavalry, on detached service.

Michie, Henry C., Jr., Lieutenant, Medical Corps. Will proceed to Fort Lincoln, N. D., for temporary duty.

Murray, Alexander, Captain, Medical Corps. Upon being relieved from duty at Fort Egbert, Alaska, will proceed to Seattle, Washington, and report by telegraph to the Adjutant General of the Army for further orders.

Pulver, A. L., Lieutenant, Medical Reserve Corps. Reports in temporary charge of attending surgeon's office, New York City.

Reynolds, C. R., Major, Medical Corps. Left Washington Barracks, D. C., en route to Camp at Gettysburg, Pa.

Richards, Robert L., Captain, Medical Corps. Relieved from special course of instruction at the Army Medical School, Washington, D. C. and ordered to New York City, N. Y., for duty as attending surgeon.

Shepard, John L., Captain, Medical Corps. Relieved from duty at Fort Logan, Colorado, and ordered to the Philippine Islands for duty on transport sailing from San Francisco, Cal., on November 5, 1910.

Sherwood, John W., Lieutenant, Medical Reserve Corps. Ordered to proceed from Fort Williams, Me., to Fort Banks, Mass., for temporary duty.

Smith, L. L., Captain, Medical Corps. Relieved from duty West Point, N. Y., and ordered to the Army Medical School, Washington, D. C., for special course of instruction.

Stuckey, H. W., Lieutenant, Medical Reserve Corps. Reports from temporary duty at Fort Adams, R. I., to detached duty with troops from post in camp at Fort Wetherill, R. I.; will return to station at Fort Hamilton, N. Y., upon return of Captain William L. Little, Medical Corps, to Fort Adams, R. I.

Wertenbaker, C. I., Lieutenant, Medical Reserve Corps. Relieved from duty at Fort Jay, N. Y., and ordered to Fort Gibbon, Alaska.

Whitney, Walter, Lieutenant, Medical Reserve Corps. Relieved from Fort McPherson, Ga., and ordered to Fort Egbert, Alaska, relieving Captain Alexander Murray, Medical Corps.

Wolfe, Edwin P., Major, Medical Corps. Will repair to this city for consultation with the surgeon general of the Army.

Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending July 16, 1910:

Berryhill, T. A., Medical Inspector. Commissioned a medical inspector from March 5, 1910.

Brown, H. S., Passed Assistant Surgeon. Detached from the naval hospital, Canacao, P. I., and ordered to duty at the naval hospital, Olongapo, P. I.

Dunn, H. A., Surgeon. Commissioned a surgeon from February 19, 1910.

Irvine, W. L., Assistant Surgeon. Detached from the naval training station, Newport, R. I., and ordered to the *Marietta*.

Philips, E. W., Assistant Surgeon. Detached from the *Marietta* and ordered to continue treatment at the naval hospital, Portsmouth, N. H.

Richardson, R. R., Surgeon. Commissioned a surgeon from January 30, 1910.

Seaman, W., Surgeon. Commissioned a surgeon from December 13, 1909.

Short, W. H., Passed Assistant Surgeon. Commissioned a passed assistant surgeon from May 4, 1910.

Stepp, J., Surgeon. Commissioned a surgeon from March 24, 1910.

Strine, F. S., Passed Assistant Surgeon. Detached from the naval hospital, Olongapo, P. I., and en route home.

Stuart, A., Surgeon. Commissioned a surgeon from March 5, 1910

Births, Marriages, and Deaths.

Married.

Foster—Frank.—In Seneca Falls, New York, on Thursday, June 30th, Dr. Harold Elmer Foster and Miss Helen Kinney Frank.

Proctor—Castellane.—In New York, on Tuesday, July 12th, Dr. Alfred D. Proctor and Miss Flora Castellane.

Died.

Alexander.—In Wheeling, West Virginia, on Thursday, July 7th, Dr. Edgar W. Alexander, aged fifty-three years.

Bates.—In Baltimore, on Friday, July 8th, Dr. J. W. P. Bates, aged seventy-four years.

Grover.—In Rushford, Minnesota, on Monday, July 4th, Dr. Henry C. Grover, aged eighty years.

Hawes.—In Louisville, Kentucky, on Tuesday, July 12th, Dr. Edwin Hawes, aged fifty-nine years.

Hessell.—In Put-in-Bay, Ohio, on Thursday, June 30th, Dr. Adam A. Hessell, aged forty-eight years.

Kassabian.—In Philadelphia, on Tuesday, July 12th, Dr. Mihran H. Kassabian, aged forty-two years.

Martin.—In Canonsburg, Pennsylvania, on Monday, July 11th, Dr. John White Martin, aged eighty-two years.

Mielke.—At sea, on board the *Celtic*, on Friday, June 24th, Dr. Rudolph Mielke, of Brooklyn, aged sixty-three years.

Oakes.—In Poland Springs, Maine, on Friday, July 8th, Dr. Wallace K. Oakes, of Auburn, aged sixty years.

Sullivan.—In McKees Rocks, Pennsylvania, on Wednesday, July 6th, Dr. Patrick Thomas Sullivan, aged forty years.

Upperman.—In Ford City, Pennsylvania, on Monday, July 4th, Dr. William A. Upperman, aged thirty-five years.

Van Bibber.—In Baltimore, on Monday, July 11th, Dr. Claude Van Bibber, aged fifty-seven years.

Ward.—In London, on Wednesday, July 13th, Dr. Leslie Dodd Ward, of Newark, New Jersey, aged sixty-five years.

New York Medical Journal

INCORPORATING THE

Philadelphia Medical Journal and The Medical News

A Weekly Review of Medicine, Established 1843.

VOL. XCII, No. 5. NEW YORK, JULY 30, 1910. WHOLE No. 1652.

Original Communications.

LICHEN PLANUS.*

BY CHARLES A. KINCH, M. D.,
New York.

Lichen (λειχήν) is a name that was given by the Greeks to the flat mosses which grow on rocks and trees. The word is still used by botanists in this sense. The Greek physicians also applied it to dry papular eruptions upon the skin, and this usage prevailed until fifty years ago. Thus, in the books of the middle of the last century we may read of lichen papulosus now known as papular eczema; lichen urticatus or papular urticaria; lichen strophulus, and lichen simplex, the papules of erythema or eczema which appear on the faces of newborn infants; lichen tropicus or prickly heat; lichen marginatus, and lichen gyratus, various forms of erythema multiforme; lichen annulatas and lichen annulatus serpiginosus or dermatitis seborrhœica; lichen figuratus which included the last four; lichen circumscriptus or orbicular eczema; lichen circinatus or pityriasis rosea; lichen agrius or lichen agrius ferox, thickened patches of chronic eczema or lichen planus that have been much irritated by scratching; lichen lividus a small discrete form of purpura; and lichen eczematodes and lichen syphiliticus, the meanings of which are sufficiently evident.

In 1862 Hebra described a chronic, recurrent eruption which he called lichen, because it was dry and papular; ruber because the papules were deep red in color when the scales were removed; and acuminatus, because the smaller papules topped with scales were elevated and pointed, resembling goose flesh. This is the same disease that was described but not so fully by Devergie five years before, under the name of pityriasis pilaris. In 1869 Erasmus Wilson described a disease characterized by dry, millet-sized papules with polygonal tops sometimes slightly depressed in the centre which when aggregated into plaques were of a lilac or violaceous color. This he named lichen planus.

In 1874 Hebra, with the assistance of his son in law Kaposi, published a second edition of his classic work. But either neglecting the lucid observations of Wilson or ignorant of them, they included within the term lichen ruber the two diseases pityriasis pilaris and lichen planus, calling one lichen ruber acuminatus, and the other lichen ruber planus. The influence of Hebra has predominated over the students of the Vienna school both in Europe and America, and great confusion has resulted therefrom. The statistics of forty years have been vitiated by the inclusion of two totally different diseases under one title. Of late years clearer views have prevailed. Thus, in Jarisch's textbook, the most complete of the late German works, the names remain, but the two diseases are clearly defined and full credit is given to Wilson.

Lichen ruber acuminatus is a rare, chronic disease of the skin characterized by small, yellow papules crowned with pointed crusts or scales. When the scales are rubbed off by the clothing or by scratching, dark, crimson red flattened papules remain. The eruption is found upon the nape of the neck; the sternal and vertebral regions; the folds of the elbows and armpits; the groins and cleft of the nates; the popliteal spaces; the palms and soles; and the dorsa of the feet, hands, and first and second phalanges. When the disease has extended into patches, they are covered with whitish scales. The natural folds of the skin are exaggerated. In the regions from which the scales are rubbed off, the skin lies in folds, and is of a dull red color, exfoliating freely. Atrophies occur, and movements of the joints are painful. Smiling is difficult, and the eyelids become everted. When the disease has advanced as far as this, the general system is affected, and the patient shows a marked listlessness, apathy, and weakness. The prognosis is always grave. Though there may be periods of improvement, the disease is bound to recur, and to progress in severity, until the skin is so extensively involved that it cannot perform its excretory functions, and the patient succumbs with colliquative diarrhœa, asthenic pneumonia, or pyæmia.

Lichen planus is an acute disease of the skin which may assume a chronic form, characterized by millet sized papules angular in outline, flat or slightly depressed in the centre, light red in color and shiny. On the lower limbs plaques may form from the size of a finger nail to a quarter dollar covered with whitish scales but of a deep lilac or violaceous color. They leave brownish stains which finally disappear. The skin is itchy, and in the vicious circle so often seen in affections of the skin, the scratch marks if deep enough become the site of new papules. The most common site of the eruption is the anterior surface of the forearm. It affects also the hollow of the loins, the inner aspect of the thighs, and the calves of the legs. It never is moist nor develops vesicles or pustules. The mucous and

*Read before the West End Medical Society, February 26, 1910.

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seminucous surfaces are often involved. In the mouth it appears as whitish irregular plaques or groups of papules of angular shape. It presents a typical appearance upon the glans penis. It never becomes generalized. There is a hypertrophied form in which the lesions are pale, rosecolored tumors, circular in outline, rising a quarter of an inch above the surrounding skin.

Lichen planus is to be distinguished from psoriasis, chronic eczema, lichen ruber, and the secondary eruptions of syphilis. Patches of psoriasis from which the scales have been removed by treatment have a tessellated surface very like that of lichen planus. But some of them will be of a circinate or gyrate form or will show a tendency to heal in the centre. A form of erythematous eczema has the same tessellated appearance, but the isolated papules at the margin will be circular in shape rather than polygonal. Eczema shows a tendency to moisture. Lichen is a dry tetter. Both eczema and psoriasis have a lighter, rather pinkish color. Chronic patches of eczema on the legs will sometimes stimulate the whitey scaled, violaceous plaques of lichen exactly. The absence of characteristic lesions on other parts of the body, the absence of small, brownish stains of previous lesions, and the presence of eczematous lesions on other parts will settle the diagnosis. On varicose and œdematous legs the disease is more likely to be eczema. The patches of eczema take a longer time to develop than those of lichen. The syphilitic papule is a new growth. There is a distinct thickening of the skin. The denuded papules are round rather than angular. Yet the resemblance to lichen is very close, and unless other coincident symptoms are discovered, as mucous patches, adenopathy, disseminated alopecia, the differentiation is difficult. A biopsy will settle this point. The section of a lichen papule shows enlargement and infiltration of the papule alone, with increase of pigment near the surface. In the syphilitic papule the infiltration is about the capillaries, both in the papilla and the corium, and the pigmentation is absent from the overlying mucous layer. The lesions of syphilis are polymorphous in character, more rapid in development, and more generalized in distribution. They occur frequently on the face, a region rarely attacked by lichen. Both are darkish in color, both are covered with whitish scales, both leave dark

FIG. 1.—Lichen planus. (Zeiss 8 mm. comp. oc. 4.) An early lesion showing increase in all the layers of the epidermis and the formation of the cell. The basal layer is disorganized and the dermoepidermic line obliterated by an infiltration of lymphocytes and fibroblasts occupying the papillary and subpapillary layers. The vessels in the lesion have narrowed lumina or are entirely obscured by the infiltration. The corneous layer of the epidermis is much thickened and presses into the site in a funnel shaped form.

brown stains. The color of syphilis is pink or reddish brown, that of lichen is lilac or violet.

The disease process begins in lichen in the papilla with enlargement of the calibre of the capillary loop and softening and infiltration of the cells of the rete and of the fibres of the derma. In psoriasis it begins in the mucous layer, which is thickened, keratinization of the horny layer is interfered with, and white, silvery scales are thrown off. In lichen ruber it begins also in the mucous layer, with exfoliation, which is abundant. In eczema there is an inflammation, with congestion of the derma, softening of the mucous layer, loss of the horny layer, and secretion of a sticky fluid.

Wilson has noticed lichen planus in the proportion of fifty-one cases to 10,000 of all skin diseases. The statistics of the American Dermatological Association for five years vary from forty-six to fifty in 10,000.

The therapeutics of lichen planus is simple. As a rule dermatologists use in their practice very little arsenic. Yet in this disease it had a reputation. Among its disadvantages are the slowness of its action, the danger of acute or chronic poisoning, and the undoubted increase of pigmentation following its prolonged use. Patients do slowly improve under its administration. Since many afflicted with this disease are broken down and debilitated, they are much benefited by codliver oil, the bitter tonics, and iron. In cases which show the effects of nervous strain, the hypophosphites, strychnine, and small doses of the mydriatics are indicated. When none of these conditions exist, and the patient is robust and full blooded, lichen improves rapidly with the use of oxidizing agents. The celebrated prescription of Professor Boeck, of Christiania, twenty grammes of potassium chloride, twenty minutes after eating, followed by twenty minims of dilute nitric acid, twenty minutes later, has given results almost magical. This has been simplified lately to the use of dilute nitric or hydrochloric acid after meals, with equal benefit. Excellent results have also been reported from the administration of protiodide of mercury in quarter grain doses three times a day.

Lichen planus never brings about the death of the patient, as lichen ruber does. Yet it is tedious in its course, and requires in its care, great patience on the part of both physician and patient. Sometimes it will get worse in spite of treatment, and sometimes it will disappear spontaneously without regard to medication. A cure in seven or eight weeks is a brilliant result. Many cases endure for a year or more, and Boeck and Lavergne have reported cases that have continued for twenty-five and twenty-six years. None of so great duration have been observed in this country.[1]

74 West Sixty-ninth Street.

SPONDYLITIS DEFORMANS

With Brown-Séquard Syndrome, Having Reference to Surgical Intervention.

By Antonio M. Crispin, M. D.,
New York.

The following case is reported on account of some interesting features, which throw some light of a confirmatory nature on the physiology of the spinal cord, and of its importance from the surgical standpoint. These lesions, curvature, tumors, and injuries of the spine are practically as valuable as an experimental lesion would be in giving us more definite information concerning the function of the various tracts of the cord. Spondylitis deformans is a term used to denote a disease of the vertebræ characterized by an inflammatory process of the in-

Fig. 2.—Lichen syphiliticus. (Spencer 1 m. comp. oc. 4.) The white oval is an oblique section of a hair. The process extends along the hair follicle into the cutis below the hair papilla and consists of a verticular structure with round plasma and connective tissue cells in its meshes. Inside the area many of the vessels are completely obliterated; others are thrombosed and simulate giant cells. At the periphery of the infiltration a few engorged vessels are present. Away from the perifollicular part the vessels are thickened and sheathed by a few round plasma cells. The coil glands are surrounded by the same cellular elements and are the seat of a marked fatty degeneration. Two outgrowths from the affected hair follicle penetrate the active process. The epidermis presents no noteworthy changes.

[1] The photomicrographs with their descriptions are published by the courtesy of Professor John A. Fordyce, M. D.

tervertebral disks and joints, with nodular deposits at the edges of the articular cartilages, which is liable to terminate in atrophy or degeneration at the point of pressure.

The condition, while not especially rare, is sufficiently uncommon, as few cases have been reported, one by each of the following writers, Strümpell, P. Marie, Heilengenthal, Hoffman, and a few others. Most of those cases were located in the cervical region, and none, so far as I am aware, occurring in the dorsal vertebræ presenting the unusual symptoms of the case herein recorded.

Fig. 1.—Spondylitis deformans.

Age seems to be a predisposing factor, although no age is exempt from it. Eulenburg observed it in a girl of twelve and Whitman in a boy.

One of the curious results in the vertebra is the complete interlocking of the articulation, eventually terminating in a curvature of the spine, with deformity of an angular shape contrasting markedly with the rounded deformity which obtains in simple kyphosis.

Many of the cases classified as arthritis deformans, spondylarthritis, perispondylitis, belong in all probability to the group of chronic spondylitis deformans, and from a purely scientific nomenclature ought to be included with it, but clinical tradition opposes this. It is frequently but not invariably associated with similar process in other joints.

No satisfactory explanation of the real cause of the disease has been advanced, nothing but conjecture, the cause still eludes us. It has variously been attributed to the rapid changes of temperature of the affected part; microbic action has been accused of producing it; and gonorrhœa has also received its share of responsibility. Rheumatism was believed to be the cause, but probably traumatism has more influence in its production than is generally admitted. Syphilis and tuberculosis of the spine while having some resemblance, differ in many essential points. Carcinoma of the spine is secondary to a growth elsewhere.

According to Henle only four autopsies are reported, so that little is known regarding the pathological anatomy. One thing is well established, that the lesion is of a chronic inflammatory nature, of slow progress, with consequent ankylosis, deformity, and paralysis. The involvement of the cord is due to the degree of deviation, with compression of the spinal nerves and final myelitis. These changes in the cord supervene as a result of the compressional stress, caused by a caseous mass in the spinal canal, granulations, and scars of a peripachymeningitis or by narrowing the lumen of the canal and the sharp flexion. The lesion of the cord is not limited, generally, to the point where the most pressure is exerted, it extends above and below that point in obedience to the laws governing degeneration, as descending and ascending, although a circumscribed serous meningitis may occur.

The symptoms vary according to the location of the disease in the spine and the amount of pressure exerted on the medulla spinalis, and the slowness with which it is accomplished. Here like other things in nature, it resolves itself into a question of position. The higher up in the cervical region the more distressing and dangerous the symptoms.

When the dorsal region is affected, the patient may complain of pain in the lower part of chest and upper part of abdomen, at times also of a constricting sensation as if a band was around the body, which has some resemblance to the girdle pains of locomotor ataxia. At the beginning of the disease the localization of pain in the abdomen may readily lead to a mistaken diagnosis. Symptoms referable to the gastrointestinal tract are often an accompaniment. Constipation is the rule. If the disease is lower down in the spine, in the lumbar region, the symptoms are referred to the rectum and bladder, with probable retention of urine and its serious consequences. The pains may radiate down the thighs, and at the inception of the disease these radiating pains might suggest the reflex pains which sometimes are caused by urethral strictures, especially when these are located in the anterior portion near the meatus.

Paralysis is the most important symptom manifested by the compression, and foremost in the ranks of those who have attempted the application of modern conceptions of physiology to the elucidation of the phenomena of compression are Bastian and Bowlby. From their pioneer work, three different types of paralysis have been well established. The prodromic or first stage; the second or stage of

flaccid paralysis; the third or stage of rigid paralysis. The first stage is characterized by pain and irritation of the nerve roots. Bilateral neuralgia, which may be very violent. The second or flaccid stage is when the limb though paralyzed is not rigid, and the reflexes are not exaggerated. This paralysis which the French call *paraplégie flasque* may be flaccid from the very beginning of the disease and continue to be so during the whole course. According to Babinsky when it is flaccid from the commencement and remains so throughout, operative interference is contraindicated, as it shows that the cord is destroyed beyond redemption. Notwithstanding, Babinsky maintains that the compression of the spinal cord may exist without any appreciable lesion of the organ, not even when it has produced a well characterized paralysis, which may be of several months' duration. Therefore in the living to diagnosticate the integrity of the spinal cord it is necessary that the flaccidity be not attributed to a lesion which might occupy any portion of the tendinous reflex arc, and that said lesion does not extend to the whole cord. Then there is hope of relieving the patient by surgical means. There is no fixed and fast rule governing the alteration of the sensibility when of spinal origin, but it can be asserted that it coexists with destruction of the spinal gray matter, and that it generally follows lesions of the peripheric nerves, manifesting itself by hyperæsthesia, anæsthesia, etc.

The rigid or spastic stage is marked by spasmodic phenomena, appearing after the abolition of movements, increased reflex action, exaggerated ankle clonus, and cramps. All these symptoms depending on the intensity of the compression and the rapidity with which it has occurred, and eventually causing degeneration of the pyramidal tract.

The important question which must be answered, as it has a fundamental bearing on the indication for operative interference is the condition of the reflexes and the type of the paralysis. The tendon reflexes are valuable signs, as we have seen, and their abolition denotes that the lesion is transverse and that the degeneration is complete, therefore pointing to the uselessness of operating. If the reflexes are exaggerated, coexisting with marked ankle clonus, the epileptoid trepidation of the French, with spastic contractions, we may confidently conclude that the lesion is incomplete, occupying a definite section of the cord only, and there will be reasonable assurance of benefiting the patient by operation.

These symptoms are common to all lesions which compress the cord, and in some instances, that rare and interesting syndrome first described by Brown-Séquard and known by his name has been observed, although I am not aware that it has ever been mentioned as associated with spondylitis deformans. In two other cases which I have seen of spondylitis deformans it was absent. The syndrome of Brown-Séquard is a manifestation of hemilateral compression of the cord, with more or less paralysis. The presenting symptoms are: On the side and below the lesion motor paralysis with hyperæsthesia and retention of the muscular sense. There is also a small anæsthetic zone above the lesion, and further up some hyperæsthesia. On the opposite side, the muscular power is normal as well as the reflexes, with absence of all the symptoms present on the opposite side. Anæsthesia is generally complete with preservation of the muscular sense. It is exceptional that all these features be met with, but when this syndrome is present it is of much value, indicating as it does that the lesion is unilateral, although it may not persist through the whole course of the disease.

In my case there is a beginning spastic paraplegia with diminished control of bladder—this last

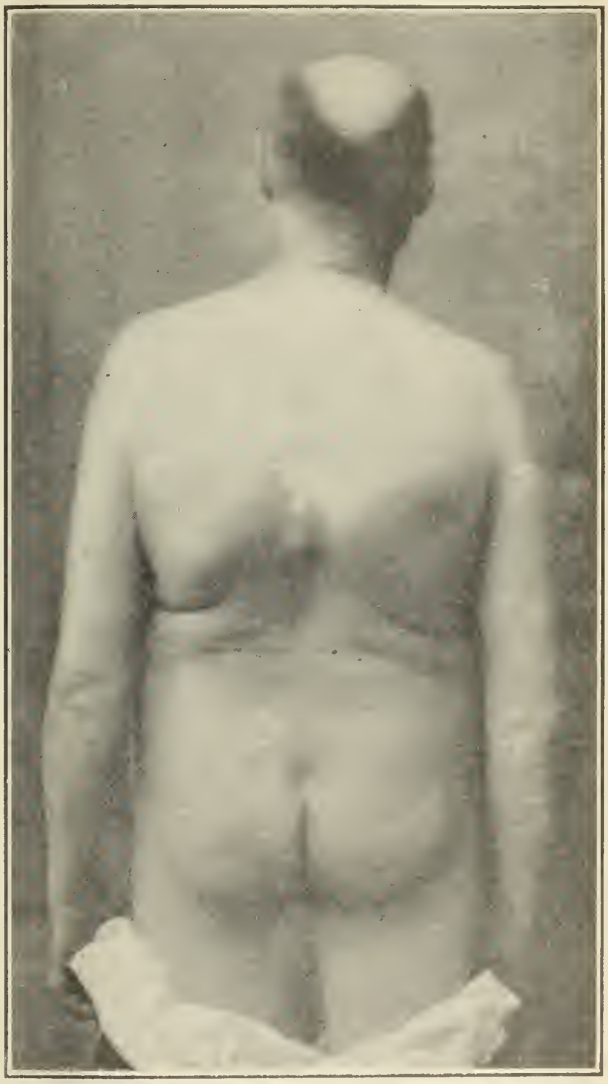

Fig. 2.—Spondylitis deformans.

symptom has improved of late—the knee reflexes are exaggerated and marked ankle clonus is easily produced, there is no atrophy in any part of the body, but weakness and torpidity in the movement of the legs; thermoanæsthesia in the lower right side of body with tactile anæsthesia in the left.

The location of the lesion in my case seems to uphold the conclusion reached by Brissaud that Gowers's tracts are the conductors of pain and temperature, and it also lends support, of a negative nature, to the clinical evidence first described by Neiden in 1873, that lesions of the upper dorsal re-

gion are productive of an excessive lowering of the temperature and pulse. The case which he reported was of a man sixty years of age, who sustained an injury of the upper part of the back, with momentary loss of consciousness, which was regained soon after, the temperature being 81° F. and the pulse 30 a minute. At autopsy dislocation without fracture of the first dorsal vertebra was found, with compression of the corresponding part of the spinal cord.

This has received additional confirmatory evidence by the recent experimental researches of Goltz and Ewald, published in 1896, who noted the very interesting phenomena that animals could be deprived of their spinal cord from the bulb down to a certain level of the dorsal region without losing their lives, in fact they lived for years after, but eventually died of cold.

The level at which section of the cord could be performed without interfering with generation of heat is placed by Ott below the fifth dorsal vertebra. Why this is so is probably due, as suggested by Sajous, to the nerve path of the pituitary adrenal system leaving the cord at this point, the fifth dorsal rami, to join the sympathetic chain and the splanchnic. The case under consideration lends support to this view, for it shows that the lesion has been at the level and below the seventh dorsal vertebra, does not interfere with the mechanism of heat production, but only with the conduction from the periphery.

There exist in all probability, two distinct paths within the column, one for the conveyance of the stimulus from the heat producing centres, and another for the conduction of heat as a sensation.

The diagnosis is of surgical importance, for the lesion is not a pure bone lesion, but a process which affects the cord and the nerve roots at the same time, as well as the bony structure. The attempt should be made to diagnosticate it before any serious and extensive destruction of the cord takes place, for when this occurs the lesion of the cord may be permanent and the deformity will surely be so.

The earliest symptoms are the bilateral neuralgia with tenderness over the spine, with absence of the localized painful spots, characteristic of simple uncomplicated neuralgia. The bilateral neuralgia is a valuable symptom, indicating that the lesion is situated in the canal. A convenient way of eliciting these painful spots, although lately out of fashion, is by pressing a sponge with hot water over the suspected area, when the pain will be augmented. Nevertheless, many cases will be overlooked, especially in the absence of any objective symptoms, there being at times insurmountable difficulty in diagnosticating the spondylitis.

With the advent of the kyphosis the diagnosis becomes clearer and then we have to decide which type is present; the shape of the deformity will aid materially; in spondylitis deformans the deformity is angular and not rounded; in tuberculous disease without deformity, abscesses or cord symptoms, the spine may be rigid, due to muscular action. The age of the patient, if young, will speak in favor of tuberculosis. Irritation of psoas muscles may be followed by flexion to one or both sides. Aneurysm of the abdominal or thoracic aorta, which have caused an errosion of the spine leading to deformity, will have to be excluded. The so called hysterical spine, which is said to be at times associated with "hysterical paraplegia," must be remembered, as well as the typhoid spine described by Gibney. The unilateral compression of the cord is shown by the syndrome of Brown-Séquard if present. It is generally very difficult to know if the compression is in the anterior or posterior part of the cord, because the signs are often the same on both sides. Those lesions which are located anteriorly seem to give as much pain as those which are situated posteriorly, its absence would favor the supposition of compression of the anterior region. When a sensitive perturbation predominates, such as delayed perception, difficult localization of sensation, and incoordination of movements, we are justified in inferring that the compression is in the posterior part of the cord.

When the perturbation of function is manifested by loss or impairment of the voluntary power below the lesion, as it happened in the case herein reported, together with degeneration of the pyramidal tract, over activity of the lower centres, especially those concerned in the muscular reflex phenomena, with increased ankle clonus, which may produce spasm or rigidity, the so called spastic or spasmodic paraplegia, we are compelled to believe that the lesion is situated in the lateral column or Gowers's tract.

The total abolition of the reflexes will indicate the existence of a complete destruction, although there be no wasting, unless the degeneration extending from Gowers's column invades the nerve cells in the anterior horns.

From this can be seen the importance of the early recognition of the pressure symptoms, which constitute a formal indication for surgical intervention, which must be undertaken before complete degeneration of the cord result.

Treatment. The indications consist in the endeavor to prevent the destruction of the vertebral bodies and the subsequent deformity, and of relieving the pressure on the cord. To obtain this, mechanical appliances will be useful. Rest, absolute rest, in bed, is one of the most efficient means at our command for relieving the weight on the spinal column and relaxing the muscular spasm. When compression of the cord is very marked resection of the vertebral arch is indicated. This ought to be done before complete paralysis shows that extensive destruction of the cord has occurred. The ultimate good result of this operation is often delayed in manifesting itself, and cases have been reported where the function of the cord has been regained even after what appeared to be complete degeneration. The possibility of this would lead us far afield into the considerations of the regeneration of nerves, which is not germane to the purpose of this paper.

Case. Patient, G. D.; age fifty-three; height 5 feet 7½; weight, 180 lbs.; policeman. Family history of no interest. Married, with several children, all healthy. Said he had malaria when twenty years old. Denied any venereal infection. Twenty years ago was wounded in the head. Three years ago was struck in the back with a stone, which caused him to fall, but he did not suffer at that time any

inconvenience from the assault. One year after he began to suffer from pain in his back, for which he consulted two physicians, who diagnosticated the case as rheumatism.

Patient came under my observation in September, 1908. He complained of pains over chest and back, at times of excruciating nature. Examination revealed an angular deformity of the rhachis, at the level of the seventh and eighth vertebræ. Patient was not aware of its presence. Spine was rigid. Could not stoop. His gait was of a peculiar character, as if shuffling his feet along. Complained of weakness of his legs and annoying sensation in the feet with formication. He was constipated and suffered from frequent attacks of indigestion. Heart was slightly hypertrophied, with accentuation of the second aortic sound, no murmurs were audible. Lungs were normal. Thorax flattened anteroposteriorily, due to the kyphosis. Epitrochlear glands somewhat enlarged, cervical and those of groin were not. Examination of nose and mouth was negative. Urine normal as to color and total amount of solids voided in the twenty-four hours. No albumin or sugar. Urethral stricture near meatus allowing passage of No. 20 F. bougy. Iris reflexes were normal, also accommodation of eye. Fundus normal. Knee reflexes were greatly exaggerated, ankle clonus very marked, other reflexes also present. No muscular atrophy, but impairment of motion, with fear of falling and lack of assurance. Retention of the muscular sense. Paresis was more noticeable on the left leg, small area of tactile anæsthesia in the upper part of thigh, with some rigidity. Thermoanæsthesia and analgesia on right side below eighth dorsal vertebræ, with normal motion, but slightly constrained. Circumscribed zone of anæsthesia on outer side of thigh and above all, a hyperæsthetic band. Normal electric reaction.

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THE BORDERLAND BETWEEN MEDICINE AND SURGERY.*

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My subject, the borderland between medicine and surgery, is one that appeals to all of the different specialists in our profession and to the general practitioners as well. Marvelous changes are taking place in our practice. A review of them is always timely.

Until well along toward the close of the nineteenth century internal medicine was largely empirical while surgery had not wholly escaped from the hands of the barber and leecher. It is true that ether and chloroform had been discovered, and the operating room thereby robbed of its most horrifying terrors. Yet while a great advance had been made in relieving the immediate agonies of operation practically no advance had been made toward the modern technique which has done so much to make our present surgery safe.

The one great factor that did more to influence medicine in both its medical and surgical aspects was the discovery that germs were the great causative factors of disease. With an unfolding of the knowledge of bacteriology, the isolation and study of the bacterial causes of the various diseases medicine gradually passed from a state of empiricism in which it had been for ages, to one more nearly approaching that of an exact science. With the discovery of the bacillus of diphtheria came the evolution of the antitoxine that has all but robbed this dreadful disease of its terrors. Other antitoxines have been developed until we are able to prevent or attack with fair success diseases that were formerly hopeless, like tetanus and meningitis. Not only have a number of useful antitoxic sera been prepared, but studies in this direction have lead to preparation of immunizing bacterins or vaccines that tend to build up the so called opsonic index and make the system of the individual more resistant to any special infection to which it may be susceptible. By this means valuable results have been attained in treating such diseases as furunculosis, the complications of gonorrhœa and tuberculosis. While the discovery of bacteriology has been of so much value from a strictly medical standpoint, it has been of equal if not more value in the development of modern surgery. After the work of Pasteur had placed bacteriology upon a sound footing, Lord Lister conceived the idea that surgery would become safe if surgical wounds could be protected from the effects of pathogenic germs. His work in developing antiseptic and aseptic surgery is too well known to need more than a mention here. The results of his work are more far reaching than the most sanguine could have imagined at that time. The laudable pus of the older surgeons is a reproach to modern surgery. Cavities of the body that were formerly regarded as most sacred came to be opened in pathological conditions and their contents examined almost as a matter of routine. The high mortality of exploratory operations on the abdomen gave way to a mortality that was nil or one of accident. Obscure diseased conditions were examined and studied by direct methods and much advancement made toward the cure of many of them. It is an unquestioned fact that modern surgery has been a most important factor in the elucidation of pathological knowledge. As our understanding of pathology became broader and more accurate a decided change took place in our conception of many diseases. Conditions that were formerly regarded as belonging strictly to the province of the internist passed on to debatable ground or definitely within the domain of the surgeon.

The borderland to-day is represented almost entirely by the line of encroachment of modern surgery upon the field of the internist.

Among the first and most marked of the revolutionary changes that followed the researches of Lister, was the invasion of the abdominal cavity and treatment of abdominal lesions by surgical means.

It is only a comparatively few years since an enthusiastic young surgeon in one of our American medical societies advocated ovariotomy for certain ovarian tumors. There was present one of America's great surgeons—a man whose fame was national and whose word was law in all things surgical, for hundreds of miles around. After the young surgeon had vehemently espoused the cause of laparotomy for these conditions the great surgeon rose to his feet and impressively remarked: "Gentlemen, I have done four of these operations and four little mounds in the cemetery mark the results of my work." This same surgeon died less than thirty years ago of peritonitis from a perforated gallbladder as a result of gallstones from which he had suffered for many years. At that

*Annual address given before the Association of ex-House Officers of the Toronto General Hospital, at Toronto, Canada, March 28, 1910

time his colleagues considered the condition as strictly medical, and surgical means were not advocated for his relief.

Imagine to-day, if you can, a surgeon of national prominence, suffering for years the untold agonies of gallstones disease and then going to his death with only internal medicine to relieve his suffering. Yet this is but an example of what has occurred within the past few decades. Innumerable lives have been sacrificed by treating by medical means conditions that could to-day be cured by the surgeon. At the same time it must not be forgotten that pioneer surgery in the cavities of the body lead also to very many unnecessary deaths.

The two great fields first invaded were the pelvic and appendiceal regions. For a long time a fierce war was waged by the internist and surgeon as to the proper treatment of appendicitis. The physicians, by rest, opium, ice or poultices, were able for many years to show a mortality equal to or better than that of surgery. It is true that the surgeon in his dangerous cases usually found pathological conditions that seemed to warrant his work, but it is equally true that it was a long time before experience had taught him how to improve on Nature's method of overcoming these infections. Indeed, to-day, reviewing the subject of appendicitis from its broadest standpoint it is a question if as many deaths have not resulted under surgical as under medical treatment.

This may seem a radical statement to those of you who are accustomed to see surgery of this kind done by competent men, but it is an unquestioned fact that a great deal of appendicular surgery has been done by men untrained in this class of work. A prominent western surgeon told me of a man who had operated upon twenty patients with eighteen deaths. I do not cite these facts to justify the treatment of appendicitis to-day by medical means, but to show that the physicians were justified in the fight they made against surgical operations in this disease for so many years. Now, however, with modern technique and modern methods, surgery, if proper surroundings are available, should supplant internal medicine in the treatment of this common and dangerous affection. If proper surroundings and surgical skill are not available the patients will probably do better under the treatment of Ochsner than under any other plane.

Indeed, my feelings are in accord with the sentiment expressed by Dr. Robert T. Morris, of New York, when he said, "that if taken with appendicitis and a competent man were not at hand, he would rather trust to rest, ice, and opium, than the kindest hands that ever attempted to render unskilled surgical services."

The field of pelvic diseases was entered by the surgeon with a great deal of enthusiasm. McDowell had performed his classical operation for ovarian tumor in a cottage in Kentucky more than one hundred years ago. From that time until after the researches of Lister, elective abdominal surgery had remained practically dormant. With the dawn of the era of antiseptic surgery, however, the surgeons, led by Tait, began to operate freely on the pelvic organs. Pathological conditions both major and minor were removed, and even we fear at times women were unsexed with the idea of overcoming some remote nervous condition much less serious than the results of operation. It is an unquestioned fact that ovariotomy was carried to a most extreme degree, and many unjustifiable operations performed. The pendulum has, however, swung back, and surgery of the female pelvic organs is now carried on with a commendable degree of conservation. Small ovarian cysts are removed, leaving the ovaries practically intact, and fibroids in many cases of considerable size are treated by myomectomy, instead of by the more radical and mutilating hysterectomy.

One of the borderland questions of this region that is becoming more and more prominent, is that of Cæsarean section. During the past year a large number of prominent medical men both at home and abroad have contributed monographs on this subject: Harris reports (1) twenty-one operations with twenty-one living mothers and nineteen living boys and girls. The twenty-one mothers had previous to their operations, lost thirty-nine children. Two of the patients were delivered twice each by the Cæsarean section. In the opinion of Harris this operation is indicated in : 1, When the conjugate measurements of the pelvis is below three and one half inches; 2, when the presence of tumors renders delivery impossible; 3, in central placenta prævia; 4, when, with a conjugate diameter below three and one half inches, the forceps has been applied and no advancement can be detected after ten minutes; 5, when a woman has had one still born child of moderate size following application of forceps; 6, when a woman has lost two or three children from accident during labor; 7, in cases of eclampsia at full term, Cæsarean section is preferable to cervical dilation followed by version of high forceps; 8, when ventral fixation renders operation necessary; 9, in certain pelvic deformities as dwarf pelvis, coxalgic pelvis, kyphotic, and oblique pelvis. While many of the foregoing indications seem much too radical, still with the result that we are now able to secure by Cæsarean section we believe it indicated in conditions like central placenta prævia and those cases of extreme deformity where craniotomy was formerly resorted to. Indeed, I believe Cæsarean section is not only justifiable, but demanded whenever the employment of the ordinary vaginal methods of delivery would seriously imperil the life of the child. In these cases two lives are at stake and both demand our earnest consideration. With the lessened mortality as the result of improved surgical skill and technique it would seem as though the operation would become the rule in many conditions where it is now the exception.

The general advance in medicine is nowhere more marked than in the genitourinary tract. By means of the cystoscope and uretheral catheter we are able to make more accurate diagnosis of the location of various lesions, and to apply topical remedies to diseased areas in the most exact manner. A study by means of the cystoscope gives us an accurate idea of the area and condition of the interior of the bladder and helps us locate and in many cases remove small stones that would have formerly been subjected to radical operation.

Cabot (2) has pointed out that nearly all papillomata of the bladder may become cancerous unless removed early. He considers that removal of these growths through a cystoscope is not sufficient, and states that the growths should be removed by open operation. In cases of cancer formation in the bladder or the imbedding of stones in a diverticulum a considerable area of the bladder, especially near the fundus may be removed without causing serious inconvenience to the individual. As cancer of the bladder is very slow to invade the circulation, a resection of the bladder should be done in all favorable cases.

Borderland diseases of the upper abdomen are so closely associated with malignancy that that question becomes of supreme moment. In the matter of vital importance no one of the borderland questions is to be compared to that of malignant diseases of the gastrointestinal tract. A study of the present status of the gastrointestinal cancer gives promise of saving many lives and relieving much suffering. The prevalence of cancer in this region is not fully realized by the profession, and the vast majority of these cases remain in the hands of the general practitioner until too late for any hope of a permanent cure.

A case of yellow fever in our Southern States or a case of cholera at quarantine are heralded the length and breadth of our land, but cancer that claims such a rich harvest of human lives, is accepted as one of the afflictions that leaves humanity no hope. In 1890, McConnell showed by government statistics that the death rate from this disease was 47 1/9 for each hundred thousand population or thirteenth in the list, and the later statistics of 1900 showed that it had moved up to seventh place with a death rate of sixty per hundred thousand. According to statistics one half of all the cancers of the body are gastrointestinal. The location of cancer in the gastrointestinal tract seems to bear a direct relationship to the amount of work done or irritation of any particular locality by the food. Thus, the pyloric end of the stomach and first portion of the duodenum are much subject to irritation by food, and it is here that ulcer and cancer are most prone to occur.

At this point it is interesting to note the view advanced by Bland Sutton, (3) that cancer is due to a microparasite probably taken in with the food and water. He calls attention to the finding that the retention of food in the descending colon and sigmoid is favorable for the invasion of epithelial lining of the gut by an infective agent. His view is a debatable one, but it is worthy of note because of the prominence of its sponsor. According to Graham seventy-six per cent. of gastric cancers are located in the pyloric region. After leaving the duodenum the cæcum is the first point where food is detained, and here again we find ulcer and cancer. One sixth of all the cancers of the alimentary tract are found in the large bowel and nine out of eleven of these occur in the rectum. Dowd's tables show that thirty-one per cent. of cancers are gastric, thirteen per cent. are hepatic, eight per cent. in other abdominal organs, sixteen per cent. are uterine, ten per cent. mammary, six per cent. head, neck, or face, and five per cent. of tongue, throat, or mouth. From the great increase of gastrointestinal cancer reported it would seem as though it had until recently escaped recognition in quite a percentage of cases.

Recent operative work and clinical and pathological study have seemed to point most distinctly to ulcer as the most fertile cause of remote cancer formation. Persistent irritation of any part seems to have a marked relationship to the occurrence of malignancy. Thus we have cancer of the lip in smokers or where a sharp tooth has been irritating for a long time. Cancer of the scrotum in the chimney sweep and cancer of the breast often apparently traceable to a blow or to some irritation. From analogy it would seem not only possible but extremely probable that an ulcer of the gastrointestinal tract being constantly irritated by food should in a small percentage of cases tend to malignant formation. Now, if cancer is engrafted on the sites of ulcer as seems to be the case it has led many surgeons to reason as Coffey remarks "Is it not possible to prevent many cancers by rapidly relieving and curing the conditions?" Graham has called attention to the marked precancerous history of many cases that lasted for years, and states that it is typically that of chronic ulcer. That chronic ulcer is the forerunner of cancer has been demonstrated in a large series of cases, in sixty-two per cent. of those operated on in the Mayo Clinic in 1906-1907 and 1908. The observations of Graham seem to coincide with those of Moynihan, who says that cancer of the stomach, in so far as it depends on chronic ulcer for its origin, is a preventable disorder. It is possible that two thirds of the whole number of cases may be so classed. Moynihan contends that surgical treatment should be advised in all cases of stomach disorder in which there is obstruction, stasis, or tumor, and in old cases of chronic ulcer. In this way early cases of carcinoma will be found and radical treatment will be possible. He further adds, that there are no symptoms and no signs which individually or collectively permit of an assured diagnosis of cancer of the stomach in an early stage and advises exploratory operation where there is a suspicion of its existence.

Graham (4) states that we have a problem before us that calls for the best combined efforts of the internist and the surgeon. The problem is to evolve a method of early diagnosis in cancer of the stomach, so that the sufferer may be offered a chance of cure. He further states that surgery offers the only means of cure and should be advised in all cases when, 1, the diagnosis is made early enough; 2, the location of the cancer makes the case an operable one; 3, when the promise of relief or cure is likely to yield returns for the suffering and danger borne by the patient. Personally I believe that the keynote in the treatment of obscure conditions of the abdomen is the more frequent resort to exploratory laparotomy. In this way painful and dangerous conditions like gastrointestinal ulcers, gallstones, or chronic appendicitis may be cured with in all probability a marked decrease in remote cancer formation.

Diseases of the chest, outside of empyema, have long been regarded as belonging strictly to

the province of the internist, but even here we find the surgeon attempting to secure a foothold.

Injuries of the heart by gunshot or stab have been treated along definite surgical lines in enough instances and with sufficient number of successes to justify us in recognizing this as the only proper method of handling these desperate injuries. Solomoni (5) has collected 158 cases in which the heart has been sutured, and in this series there were fifty-eight recoveries. In adherent pericardium, especially in adherent mediastinopericarditis, Brauer (*Archiv für klinische Chirurgie*, lxxi, Heft 1) has carried out an effective operation for the relief of the condition. The operation, which he designates "cardiolysis," consists in resection of the ribs and cartilages, and even the margin of the sternum, to which the heart and tissues about the pericardium are adherent. The periosteum, as well as the ribs and cartilages, is removed. The object is to convert the resisting chest wall in the regio cordis into a soft, yielding tissue, so as to allow the heart to contract with ease and the diaphragm to descend in inspiration, carrying with it the heart and the roots of the lungs. By this means not only is the heart relieved of much that hampered its action, but, by allowing the diaphragm to descend, the respiratory capacity of the chest is greatly increased. The surgeon, however, has been experimenting on the lower animals with the idea of overcoming definite valvular defects by surgical means.

Lauder Brunton has raised the question, "Can a mitral stenosis be transformed by surgical measures into a mitral insufficiency with benefit to the patient?"

Bernheim's (6) observations have led him to believe that there is a future for this operation. In this age of miracles it seems hardly right to say that anything is impossible, but considering the delicate mechanism of the heart and the disaster involved so readily in its manipulations it seems improbable to the most extreme visionary degree that anything but for ill can ever be accomplished in attempting to cure these lesions by the surgical art.

An important contribution has been made by Murphy (7) in his report of the removal of an embolus from the common iliac artery with reestablishment of the circulation in the femoral. Murphy expressed the opinion that in all cases of aseptic embolism immediate removal by division of the artery in the line of the embolus or below it should be resorted to. These emboli produce mere mechanical obstruction and the circulation is immediately reestablished by their removal. The symptoms which indicate the occlusion of a large artery are, 1, pain; 2, ischæmia of the limb; 3, cooling of the surface; 4, absence of pulsation in the arterial trunk. It would seem as though there should be a marked improvement in the treatment of the heart and bloodvessels by the internist. Methods should be discovered to influence the blood so as to prevent the formation of valvular vegetations and their resulting cardiac ruin.

In the treatment of tuberculous diseases of the lungs most interesting results have been obtained by Fredrick (8) in his clinic at Marburg, Germany, by extensive resection of the ribs on the affected side so as to allow of collapse of the lung on that side and much needed rest of the diseased area. He states that an unconditional preliminary requirement for the admission to the operation is to select only such cases of unilateral phthisis in which the other side is not simultaneously affected with active progressive foci, passive processes alone being present. The effects of the operation are: 1, To cause collapse of cavernous lung tissue; 2, extensive exclusion of the lung on the operated side from the respiratory function; 3, retardation of the pulmonary circulation in this lung; 4, through the arrest of breathing in this lung an essential diminution of the lymphatic circulation and absorption. In his earlier cases he removed all of the retrocostal periosteum, but this led in some instances to a protrusion of the lung over the healthy area and he found it better to leave the periosteum so that a certin amount of bone reformed. He states that the natural results of the interference are, in the first place, a considerable taxation of the opposite lung by respiratory function, but this is promptly met by a compensatory hypertrophy in this lung. Fredrick states that the immediate results in the course of the disease are particularly impressive. Defervesence follows rapidly in patients with high fever. In every case the amount of sputum is enormously reduced (from 200 to 10 c.mm. and less within some days, at most weeks) after the operation and the irritative cough diminishes. In all our cases an increase of body weight and improved subjective condition are noted in the further course. Fredrick adds a further warning in the selection of cases that it is of the utmost importance to see to it that in the selection of cases that the patient has not yet passed his fortieth year and that the general nutrition is fairly good. This procedure is so radical and at times attended with such alarming symptoms that a number of less severe measures have been advocated. Among the less severe procedures may be mentioned 1, the production of an artificial pneumothorax (Murphy); 2, by removal of portions of ribs in the axillary line, with their periosteum; 3, by a similar operation without the removal of the periosteum, followed by external pressure by means of a truss as advocated by Freeman. All of these measures have definite value in selected cases, but it is much too early to say whether or not they will ever become recognized as worthy of being regarded and recommended as routine surgical procedure.

Diseases of the thyreoid gland have recently been the subject of much experimental and clinical study. Wilson (9) states that from a clinical standpoint a case of Graves's disease is one with an enlarged thyreoid in which there are evidences of too much absorbed secretion. A simple goitre on the other hand is one in which the thyreoid is enlarged, but the evidences of excessive absorption are absent. That there is a very close relationship between simple and exophthalmic goitre is shown by the fact that a large percentage of cases of simple goitre at times reveal exophthalmic symptoms. Mayo holds that the clinical manifestations are due to oversecretion and states that the rational treatment is to employ methods that will reduce this secretion. In

the light of present surgical knowledge, this is best accomplished by removing a part of the thyreoid gland or lessening its blood supply. In the early stage of the disease ligation of the superior thyreoid arteries and veins on both sides usually brings about a radical cure. If the cases are more aggravated it may be necessary to do the radical operation of removing a portion of the diseased gland. Many of these conditions become so aggravated before they are seen by the surgeon that it is imperative that the operation be done in two stages. At first the vessels are ligated—a procedure that leads to very marked improvement in the patient's condition—and a few months later part of the gland can be safely removed. In about two thirds of the cases seen by the surgeon operation for removal of the enlarged lobe and isthmus can be undertaken without undue risk. In about one fourth of the cases the condition is so extreme from continued toxic absorption that preliminary ligation of the vessels is advisable. In a small percentage of cases, rest in bed and heart tonics are demanded before the patient is in a condition to stand the smallest surgical risk. Of 405 cases of marked hyperthyreoidism operated in by Mayo there were nineteen deaths. Of sixty-seven cases of hyperthyreoidism treated by double ligation of the superior thyreoid arteries and veins there was one death. There were 295 cases of removal of more or less of the gland with eighteen deaths, seven of which occurred in the first forty-six operations. Of 594 cases of simple goître operated in by Mayo there were but four deaths.

Crile (10) was the first surgeon to emphasize the great danger of permitting the patient to become excited before operation. He considers the psychic factor the most important in the surgical risk of goître. This factor he eliminates to a large degree for anæsthetizing the patient without telling him that the operation is to be performed at that time.

The most important of recent reports of the treatment of thyreoid diseases by strictly medical means are those of Rogers and Beebe (11). In all, these men have treated approximately one thousand cases by the specific antithyreoid serum prepared by Beebe. Of 480 patients with different varieties of thyreoid disease treated by Dr. Rogers fifteen per cent. have been cured of all traces of the disease, ten per cent. have no abnormal subjective symptoms but retain some general signs of goître. Fifty per cent. have been improved to a greater or less extent, but after a comparatively short period of treatment have passed from observation. Seventeen per cent. hae failed to show any improvement whatsoever, and eight per cent. have died from the progress of the disease. Rogers regards the antiserum as of very great diagnostic and prognostic value.

If the thyreoid is at fault an injection of from five to ten minims of the antiserum will be entirely negative in its results or there will be within the next twenty-four to forty-eight hours some slight improvement in the subjective or objective symptoms. Of these patients that do not improve under the serum he believes surgery would not bring about a cure. If, however, the serum relieves any of the symptoms, then he considers that surgery in competent hands would probably be safe and afford more rapid relief, but whether or not it is wise to operate remains for the future to determine.

Diseases of the nervous system are largely within the domain of the internist. The general surgeon does not enter the cranial cavity or the spinal region with the same confidence that he opens the abdomen or explores the chest. That there is a field and a growing field for the highly trained neurosurgical specialist would seem to be a fact. It would seem, however, as though elective operations upon the nerve centers, especially these deeper parts, should as a rule be performed by the highly trained specialist. Operations for acute epilepsy following fracture of the skull have been found by Richardson (12) so discouraging that he does not undertake them with any great hope of effecting a cure. In all cases of head injury in which fracture of skull is suspected the true conditions shall if possible be determined and any depressed fragments raised, as by so doing many serious remote nervous disturbances may be avoided. McCallum advocates the administration of large doses of urotropin in cases of fracture of the base, contending that by this means it is possible to sterilize the cerebrospinal fluid.

The subject of intracranial tumors is one that has recently been receiving much attention. It has long been considered that these growths were of rare occurrence and it is only of late that we are beginning to appreciate their importance. Cushing has shown that some of the symptoms commonly regarded as indicative of hysteria are in reality the clinical manifestations of intracranial tumor. He is of the opinion that a more widespread familiarity with the early appearance of the neuroretinal œdema and congestion is needed, and also the understanding that the condition is merely a stage of the process of choked disc.

A considerable percentage of the patients who present themselves for surgical attention are so nearly blind that a study of the visual field which should be one of the most hopeful localized signs is precluded. One of the most interesting of the borderland conditions is neuralgia of some of the divisions of the third nerve. Certain well marked ties have their origin in definite constitutional conditions, as malaria, and may give rise very promptly under proper specific medication. Another class of these cases may depend on some definite local irritation, as an abscess in a tooth or caries of bone, and these are not infrequently relieved by curing the local condition. Other cases again depend primarily upon some local irritation but have become definitely central as the case progressed. There is probably no disease more annoying to the patient or more discouraging to the medical man than some of those very obstinate cases of tic douloureux. The proper performance of the operation for removal of the Gasserian ganglion will give radical relief, but it is attended with so much danger to life that a number of other quite efficient and much less hazardous measures are usually employed before advising the Gasserian operation. Various resections of nerves and removal of portions of them have been tried with various degrees of success, but these

methods of treatment have been supplanted almost entirely by the use of injections of different kinds. Solution of osmic acid was largely employed for this purpose, but during the past two years has given way very largely to alcohol or some combination with alcohol as a base. The best combination with which I am familiar is one devised by Blair (13), of St. Louis, containing alcohol, seventy per cent.; novocaine, two per cent.; chloroform, six per cent.; and water, twenty-two per cent. After the proper use of these injections patients may get permanent relief or they may be relieved for a few months only. However, is it not better to give these patients complete relief for a few months and then repeat the procedure if necessary, than it is to submit them to the Gasserian operation that carries with it so many annoying subconditions and so much actual danger to life?

Spinal diseases do not yield a very promising field for the surgeon, but Horsley (14) has recently called attention to certain cases of spinal meningitis of unknown cause, resembling cases of tumor of the spinal cord. These cases yield to surgical treatment when ordinary medical treatment has failed. Horsley's patients were, with one exception, above the age of puberty (as a rule they were adults), complaining of pain and progressive loss of power in the legs, with in some cases slight curvature of the spine. In these patients a progressive paraplegia developed that runs the ordinary course and terminates fatally. Horsley has seen a comparatively large number of thees cases in most of which he has performed laminectomy and subdural mercurial irrigation.

For one interested in spinal diseases a study of Horsley's review of his twenty-one cases of this peculiar affection will prove very profitable.

It is manifestly impossible in a short address of this kind to more than touch upon important borderland conditions—and indeed many of these must be ignored.

It is interesting to study the progress of the medicine of the past, that of the present, and to reason as to its future. The past blazed the trail of preventive medicine, the present has diverged and extended its pathways, and the future promises to honeycomb the whole science of medicine with a basic foundation that has as its watchword "Prevention."

Preventive medicine has made tremendous inroads into the work of the general practitioner. Within the past few years we have seen, in highly organized communities, typhoid fever disappear, we have seen a marked decrease in tuberculosis, we have seen a marked sense of security develop in our quarantine sentinels who save us from such tragic invasions as those of plague, cholera, and yellow fever. Preventive medicine is increasing longevity and thereby the productive force of the country. The only class of men that does not profit by the great work done by the medical profession are the medical men themselves. It is an interesting fact and one of vital importance to many of our profession that the work done in the prevention of disease has materially reduced the income of the physician. There is only one outcome of present conditions, the number of medical students will decrease, and there will be an even greater tendency to specialize than there is to-day.

If ideal conditions are attained in medicine a specific will be discovered for diseases like cancer, tuberculosis, and infections of various kinds. We have as much reason to hope for such conditions as we had twenty-five years ago, that a specific would ever be found for diphtheria. At the present time and with our present knowledge, however, I believe the greatest benefit will be derived by placing doubtful conditions in the surgeon's domain. Malignancy wherever found must be eradicated and conditions like growths in the breast should all be considered malignant until their innocence is established.

The borderland has presented a gradual encroachment of the surgeon during the past few years. From present observations it will continue as far as abdominal diseases are concerned, but it is extremely doubtful if the line of surgical limitations has not been nearly reached as regards the nervous system and its diseases.

When my good friend, our worthy president, Dr. McGillivray, asked me to give the annual address at this meeting, I felt it an extremely high honor. The thought of the pleasure of meeting old friends, of visiting old scenes, and of being present once more at our yearly reunion, proved to be irresistible. At the same time in accepting this invitation, I did so with many misgivings as to my being able to follow in, and fill the places of the distinguished men who have addressed you at our previous gatherings. It is, however, against my creed to try to shun obvious duty, and I believe it to be the duty of each one of us to be ready at any time to do anything and everything that is possible to make these meetings a success.

In our alumni we have as proficient a body of medical men as that of any other similar institution in America. Many of our members have attained marked prominence in their individual localities, while not a few have become known and recognized throughout the entire medical world. Our time spent as house surgeon in the City Hospital here we all recall with pride, as one of pleasure and profit, and it is only fitting that the common bond thus formed should make a link of good fellowship binding us together for the rest of our lives. The inauguration of this annual meeting and banquet serves to bring together a goodly representation of our number each year, and tends to increase cordial interest in each other.

It seems to me that it would be valuable to have a list prepared of the names of the members of this association so that any one who had during the year published anything of interest could have available a list of fellow ex-house surgeons who would be glad to receive reprints of any such articles. It is only by increasing our interest in the work of our fellows that this association can reach its highest degree of usefulness.

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THE DIAGNOSIS AND TREATMENT OF CANCER OF THE UTERUS.

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The uterus is the most frequent seat of cancer in women. Williams found one death from cancer of the uterus in every thirty-five women past the thirty-fifth year of life in Great Britain. It affects the cervix most frequently; the proportion of cancer of the cervix to that of the body of the uterus is given as from 92 to 98 per cent., the first figures being probably the most nearly correct according to the writer's experience.

While the cancer age proper begins at thirty-five years, it is nothing unusual to find the disease at a much earlier period. The youngest patient coming under my care with cancer of the cervix having been only twenty-two years of age. Age has unquestionably a decided influence on the course and progress of the disease, at least when affecting the pelvic organs, carcinoma in very young subjects being unusually virulent, manifesting a marked tendency to early and rapid extension to the perituerine tissues and to lymphatic involvement, and leading to a speedy termination, in fact giving a most unfavorable prognosis at almost any stage. On the contrary, carcinoma in patients of more advanced years runs a slower course, and probably on account of the more sluggish and diminished circulation and the less active lymph current present at or after the period of atrophic changes taking place in the reproductive organs coincident with the menopause, it is less prone to early dissemination and extension, and the regional glands become affected at a later stage of the disease. Consequently older women, everything else being equal, are more favorable subjects for treatment.

Carcinoma of the body of the uterus differs very materially from a clinical point of view from that of the cervix by remaining localized for a much longer period than cancer of the cervix, showing little tendency to extend beyond the uterine wall and to invade the lymphatic system until it has reached a very advanced stage. For these reasons adenocarcinoma of the uterine body presents probably the most favorable form of cancer found anywhere in the human body, and the results of its treatment are probably the best obtained for this disease in any organ.

Cancer of the cervix, on account of the less favorable location, the neck of the womb being closely surrounded by very vascular tissues and supplied with a very extensive network of lymphatics, is characterized by rapidity of growth, early extension to the parametrial tissues and the lymphatic system. Of the two forms of cancer of the cervix the adenocarcinoma, or the cylindrical epithelium carcinoma of the cervical canal, shows these characteristics in a greater degree even than the squamous cell carcinoma of the vaginal portion of the cervix, and for that reason it must be considered the most unfavorable form of this neoplasm affecting the uterine organ.

As the curability of cancer is now largely a question of early diagnosis, a study of the symptoms and signs as manifested at its outset is of course of vital importance. Unfortunately this disease presents so few symptoms in its incipiency, in fact none that might be termed characteristic or pathognomonic, that we must therefore often base our suspicions on evidence that seems trivial, at least to most patients, and is often overlooked or ignored by them, and when they do consider it sufficiently serious to consult a physician it is often too late for help. For this reason slight leucorrhœal discharges, irregular bleeding, or even bloody stains particularly coming on after some active exertion, defæcation, or cohabitation, should be looked upon with suspicion in a woman who has passed the thirty-fifth year of her life, and should always indicate the necessity of a careful local examination. Of the early symptoms, "spotting," that is, small bloody stains upon the underwear, is probably the most significant and should never be passed over lightly. Bleeding, no matter how slight, or any other vaginal discharge in a woman past the menopause almost invariably indicates carcinoma, and delay in making careful investigation under these circumstances is little short of criminal. To wait for a fœtid, offensive discharge, pains, or evidence of cachexia before seriously thinking of carcinoma, is to invite hopeless doom. These latter symptoms belong to the advanced stages of the disease, particularly that of pain which in most instances is caused by pressure upon sacroiliac and sacrosciatic plexuses of nerves, by induration and infiltration due to the extension of the disease into the deeper structures, and consequently indicates a hopeless condition of the patient.

While the local manifestations at the outset may be but slight, with the suspicion of malignancy fixed in our minds we usually have little difficulty in recognizing cancer of the cervix even in its earliest stages. Particularly in the squamous form which springs from the vaginal (squamous) mucosa of the cervix we find either some ulceration, excoriation, or nodule on the vaginal aspect of the cervix which bleed readily to the touch. The adenocarcinoma originating in the cylindrical epithelium of the cervical canal may at times be so

hidden from view, especially if the cervix be intact and the canal closed, that it may be easily overlooked. But even here we usually find some slight protrusion or outgrowths at the external os which crumble under the touch and bleed very freely. If we insert a small curette into the canal small necrotic masses can be removed without any difficulty.

The most important evidence of cancer of the cervix in either form is the marked friability of the tissues which break down under slight pressure from the index finger and cause profuse bleeding. If in doubt a little scraping motion with the finger nail will at once demonstrate its necrotic character. This friability of the tissues and readiness to bleed from the slightest contact are so characteristic of cancer of the cervix that it readily permits us to distinguish it from other conditions, such as cervical erosions or cystic degeneration of the cervix, which in other respects may show some resemblance to carcinoma. Where there is any reasonable doubt the excision of a wedge shaped piece from the cervix for submission to a careful microscopical examination by a competent pathologist is of course necessary and should never be omitted. In my own experience, however, clinical evidence is usually so clear and pronounced that such doubtful cases rarely come under our observation.

Carcinoma of the body of the uterus is more difficult to recognize, and the diagnosis here must be largely made by first excluding carcinoma of the cervix and then carefully exploring the uterine cavity by a thorough curetting. If this is not conclusive in establishing the diagnosis of cancer, all the scrapings should be carefully preserved for a microscopical examination. A few scrapings alone would not be sufficient, as the disease may at first affect only a small area of the uterine cavity, and unless all the scrapings are carefully looked over those of the diseased area may easily be overlooked.

The only treatment promising more than temporary relief is the complete and radical extirpation of the diseased organ by operation. In many patients presenting themselves to the surgeon with cancer of the uterus the disease has extended beyond the uterus to the periuterine and deeper pelvic structures; in these the removal of all the cancerous tissues is out of the question and hence a radical operation impossible. Such patients are hopelessly doomed and nothing can be gained by attempting a radical operation. Curetting and cauterization will accomplish as much with much less risk. All cases should, therefore, be carefully investigated and only those cases selected for radical treatment in which a complete extirpation of all the diseased structures seems feasible.

The nature and extent of the radical operation depend on the seat of the disease, for owing to the difference in the clinical course of carcinoma of the body of the uterus from that of the cervix previously referred to, it is desirable to consider these two forms of the disease as entirely separate and distinct. While in carcinoma of the uterine body the removal of the uterus either per vaginam or by the suprapubic route performed in the usual typical manner will be followed by a permanent cure in from sixty to seventy-five per cent. of the cases, the same operation applied to cancer of the cervix will probably give less than ten per cent. of cures. This is now generally admitted by experienced gynæcologists; even so persistent an advocate of vaginal hysterectomy for all forms of uterine cancer as Olshausen candidly admitted at the meeting of the German Gynæcological Society held in 1908 that we could not expect to save more than ten per cent. of cases of cancer of the cervix by vaginal hysterectomy, and I may safely add, or also by the ordinary suprapubic operation. The reason of this unfavorable result is that even in the earliest stages of cancer of the cervix the parametria are found frequently involved though clinically they may seem perfectly healthy. Wertheim found these periuterine structures which macroscopically seemed entirely free from disease, distinctly cancerous on microscopical examination in twenty-two per cent. of his cases. Other investigators have found cancerous structures in apparently healthy parametria even in a larger percentage of cases. This fact helps to explain why an ordinary hysterectomy is usually followed by a prompt recurrence in the vaginal cicatrix. An operation is therefore required which will enable the surgeon to remove a large portion of the parametria and upper vagina with the uterus. This can be accomplished by the procedure now generally known as the Wertheim operation. Wertheim has been able to cure fifty per cent. of his cases by this method. Whether extirpation in the manner practised by us will give equally brilliant results the near future will demonstrate.

While the modern gynæcologists are practically unanimous in advocating extensive resection of the parametria and upper vagina in cancer of the cervix as the only means of improving our permanent results in the treatment of this disease, the question of extirpating the regional glands at the time of the radical operation is still unsettled. While this would undoubtedly be very desirable, it is generally admitted that a complete removal of all the regional glands is a technical impossibility. Whether a partial removal would benefit the patient very materially, especially when we consider that this additional step in an already difficult and extensive operation would add considerably to the operative mortality, seems very questionable. Wertheim himself, who in a halfhearted manner advocates glandular extirpation, admits that nearly all patients in whom diseased glands had been removed subsequently died from recurrence. In my own cases in which I extirpated enlarged cancerous glands a prompt recurrence followed. All of which goes to prove Dr. J. G. Clark's contention that extirpation of the glands is more important from a prognostic than from a therapeutic point of view. If they are the seat of metastasis he looks upon the prognosis as hopeless.

We have reached a stage in the surgical treatment of cancer of the uterus in which we can expect very little further improvement. The operation as now performed is about as radical and thorough as it can be made within safe limits. A material change in our results can come only by earlier diagnosis and consequently earlier operation.

Jenkins Building.

THE SPIRIT OF PROPHYLAXIS IN RELATION TO PSYCHIATRY.

A Forecast of the Extended Field of the Psychiatrist.

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New York.

Prophylaxis may be said to be the watchword of the present age, the essence of the scientific spirit as manifested in the higher departments of science which have to do with the social welfare of humanity, the science most worth while. We see this spirit at work in the efforts made for the prevention of crime and delinquency by means of juvenile courts, in which the official on the bench relinquishes his terrifying dignity and becomes the paternal and kindly adviser of the delinquent; by means of the probationary system, through which the individual case is kept under wise and closely personal supervision until out of danger; and by means of vocational training to suit individual capacity and aptitude, in trade schools and reforming institutions.

Likewise we see in the present age the prevention of poverty well under way through the systematic study of its causes, and the wisely directed, discriminating methods for its relief employed by the modern charitable organizations.

We see the same spirit at work relative to the prevention of warfare between capital and labor and of international conflicts through boards of arbitration, peace conferences, and cooperative plans.

And then, most conspicuously, we can see the prophylactic spirit at work in "preventive medicine." Witness the brilliant work that has been done and is being carried onward by those engaged in applying the principles of bacteriology and immunity to the prevention of infectious diseases, and, in a more personal way, the far reaching programme that is being carried out by societies formed for the study and prevention of tuberculosis, in the face of the great obstacles which are born of ignorance or indifference on the part of the general public, and of selfishness and corruption on the part of the more enlightened, but yet indifferent members of society. The medical profession may take a proper pride in being the pioneers in the movement for preventing social evils, especially when it is obvious that such effort has a tendency to diminish the material rewards of the profession, and eventually to put the "physician," as we now understand that title, out of business altogether.

But what of preventive psychiatry, or the prevention of insanity? This is a department of preventive medicine of which little has been heard as yet. It is quite evident that no one of these departments of social service is independent of any other but that each dovetails with every other, at least each should do so instead of touching one another only at the circumference, as unfortunately is frequently the case. And this interdependence is particularly true of the field of psychiatry. Why? Because the factors which may determine mental degeneracy or inefficiency, are so numerous, diverse, and yet interrelated with every other condition of life, that no one of them can be designated as the specific one. To glance at only a few, consider the economic conditions;—poverty, hunger, loss of employment, overwork, lack of healthful recreation, unsuitable employment, lack of education for the sort of employment which satisfies the individual capacity, with the resulting disappointment of ambitions and consequent indifference and loss of initiative, or resulting in criminal offenses; and the inability to realize ideals, or the loss of an ideal and purpose for life, which to many a personality is a serious matter in relation to the mental health,—especially if one's education has not given one interests in life over and above those required for obtaining a mere existence, or for the satisfaction of transient desires.

And then consider the other personal factors of a moral and ethical nature,—intemperance, sexual abnormality, loss of friends, inability to make friends, bereavement, and the resulting shutting out of healthful and stimulating influences; and the consequents of physiological inferiority, hereditary and acquired, must also come into consideration. And so one might go on in his attempt to itemize all the factors which might have played a part in the causation of any one case of insanity, and be unable to say which was primary and which contributory.

Therefore, we are forced to accept the fact that no intelligent study of the ætiology of insanity and no efficient effort toward the prevention and control of insanity can be undertaken without widening the sphere of psychiatry, without cooperation with all the other professions which exist for the study of human frailty and the improvement of the race. I refer to such professions as pedagogy, political economy, philanthropy and social service, jurisprudence, theology, and various special departments of medicine and surgery.

The department of education was mentioned first, as seeming the most important to consider. Why? Because in the child lies the hope of each succeeding generation of society; the cradle of the little child is the cradle of the race. The benefits of proper training in childhood are certain and far reaching. In order to achieve lasting results the work of prevention must be undertaken during the period of educability—before settled habits have been formed. Therefore, such work must be chiefly educational in character. The foundations of most physical and mental disorders are laid in childhood and adolescence, neuropathic and psychopathic constitutions are seen earlier in life than formerly because of faulty management of body and mind during the period of infancy and childhood. So keenly has this become realized by psychologists and educators, that "child study" has become a special department of the curriculum; much has been learned and yet remains to be learned from the study of the child which has a practical bearing upon normal and abnormal psychology.

In looking at the histories of cases of dementia præcox, undifferentiated depressions, the various types of psychoneuroses, psychasthenia, hypochrondriasis, neurasthenia, and hysteria, one is surprised to note how small a part heredity seems to play in the causation of these disorders. One must conclude, then, that the mechanism of the abnormal

condition is a part of the acquired mentality of the individual, and this mentality is the result of education. An analysis of such cases reveals, to a startling degree, that the patients have never been trained to adequately adapt themselves to the variations of environment consequent upon modern life, to adapt themselves to *misfortune* and all that term embraces, to bring themselves to a correct understanding of their *ethical* relation to their fellows, or to bring their emotions under the cooling survey of their intellect, and thus analyze themselves before taking a blind course on a sea of troubles; in other words, acting irrationally because thinking incoordinately. Whatever moral instruction they have had has not been such as to serve them in the hour of need, but has been a thing apart from the commonplace duties of daily life, and they are unable to bring it to bear upon the day's work. They cannot think sanely, because they have never learned how. Their primitive instincts run riot, because the steadying guide of reason has been uncultivated. The principles of ethical philosophy have been left out of their school curriculum, or not taught in a practical way, or postponed until a late day—after the bitter school of experience has done its work. But many fools are turned out of this school who might have learned in a better one, and the ideal school is that which prepares one for his experience by making him master of himself first of all. Only then can he be master of his fate. How many cases of insanity have their origin in ignorance of sexual hygiene, or in an unhealthy attitude of mind upon the subject, which again is due to lack of proper education?

How often the patients' histories show that their education has failed in not stimulating natural aptitudes for any particular vocation, and the child as it grew up did not acquire a purpose for its life, or did not find its natural level, because the education while at school was such as to only arouse inordinate ambitions which could never be attained under the circumstances. Not that ambition is a bad thing, but that failure to see a purpose and a relation to all other phases of life in the "daily round and the common task," is a serious detriment to happiness, and tends to repress and ultimately extinguish the inspiration of a high ideal, and a sincere interest in the simple things which make character great and noble because simple.

The psychology of "the misfit" is most instructive. It was not without good reason that the younger Dumas bewailed that the children of his day seemed to grow stupid and uninteresting, and less admirable as they grew up under modern educational methods. To "educate" means to "lead out," but alas! too often a system which represses, or fails to cultivate natural tendencies for a useful and beneficent end, is substituted. Here, as in many other directions, the little child should lead us, we taking our cue from him, and not forcing our imperfect and misconstrued stock of worldly wisdom upon his so sensitive nature, to the crushing point of any originality. To teach a child how to use his mind healthfully would seem to be of more importance than to attempt to store it with second hand furniture in the form of abstract knowledge which cannot be applied in the ethical relation between himself and his fellows, the disturbance of which is the root of unhappiness.

It is therefore necessary that school teachers be instructed in mental pathology, and that better care be taken in the selection of teachers, not only as regards their theoretical knowledge of psychology, but also in respect to their personal qualities—the influence of the latter being immeasurable.

It is likewise essential that the school and the physician be coworkers in the development of the child. This is now in operation as regards the oversight of the physical condition of school children, and to some extent of their mental condition, though the latter has so far attracted much less attention.

Surely, mental health is of fully as much importance, if not of more importance, than physical culture! Are not the ravages of mental disease more terrible and detrimental to the happiness of the individual and society? Is it too much, then, to demand that the system of medical inspection in schools be extended so as to secure the services of the properly trained psychiatrist on its staff? And is it too much to demand instruction, by those properly qualified, in mental hygiene for the school child and advanced student as well as in physical culture? If not, it is but a short inevitable step from this to an extension of this field of prophylaxis into the home. This brings to our consideration the advisability of adopting the present system of employing district physicians and visiting nurses in the homes of the sick poor, to a similar system having for its object the oversight, treatment, and diagnosis of mental disease. Such a corps of physicians and nurses, trained in psychopathology, could be sent to the home of the abnormal child or adult, who had been referred from the school, dispensary, psychiatrical clinic, or other charitable agency, and determine the source of the individual difficulty, whether in the nature of the environment or in the constitutional tendencies of the patient, whether due to lack of proper parental or educational discipline, ignorance, lack of suitable employment, overcrowding, physical privations, general mismanagement of the domestic life, or any of the other many accompaniments of ignorance and poverty.

Most social workers agree that ignorance is the primary condition of domestic distress, and so the work here given again becomes largely educational in its aspect. But it must also be carried on in cooperation with those activities which are specifically philanthropic and educational, e. g., the "social settlements."

In this connection one is reminded of the need of special hospitals for the treatment of the various forms of nervous disorder and especially for the treatment of "nervous break down" in its incipiency. The writer has not in mind patients who are certifiable as insane, but rather those patients in whom the stress of modern life has just begun to lower efficiency and in which a continuance of the struggle with the environment brings almost inevitably a subsequent collapse. Many institutions exist for the care of such patients if they can pay the high price demanded for treatment. But how few are the havens of refuge for those without means or only sufficient means for the day! General hospitals refuse such patients and they cannot

be blamed for doing so. Their beds are required for the more urgent type of patient where the issue is life or death. Furthermore, their facilities do not permit of proper treatment for such patients. What is needed is a resting place where the patient may for a time put aside all customary activities and the worriment coincident to them, where he may isolate himself or not as he prefers or is advised, and the element of restraint be entirely absent.

Such an institution was started in 1905, at Brighton, England, by Dr. Helen Boyle. It is situated in the midst of the city and the care and treatment given are entirely free to those unable to pay. Many of the patients are referred to this hospital from the clinics for nervous and mental diseases in the metropolis instead of being given a bottle of medicine and told not to worry. Many of them are overworked mothers of the poorer class, shop girls, etc. The patients have the privilege of going about in the neighborhood for exercise or amusement, and those requiring rest in bed have all the facilities of the modern sanitarium. To quote from the article in the *Journal of Mental Science*, October, 1909, in which this institution is described, Dr. Boyle writes: "It claims to deal with the results of nervous stress earlier than can be done in any other way, and to try to teach that kind of mental hygiene to the individual which, if generally appreciated, would result in national hygiene of the same kind. If any one needs entire change of life and surroundings in order to get better surely it is the poor, tied as they are by conditions of poverty which make recovery impossible."

This sort of work has so many phases that it must be carried on by trained workers, and the training acquired in the study of physical and mental disease is the most comprehensive, and the best adapted to an intelligent study and successful solution of the problems involved. If the control of mental disease is recognized as of quite as much importance as that of the infectious diseases, it is not at all unreasonable to picture the psychiatrist as an officer of the public health service. By systematic work along those lines, the State would attain a better control of incipient cases of insanity, and the convalescent or recovered cases would be secured a continuation of medical oversight. In this latter connection, it is suggested that the facilities for the after care of the insane—which now consist chiefly in finding homes or employment for patients who have no means of support—be extended to include regular visitations to the patient by a physician who has been familiar with the case during the patient's period of hospital care. Where this oversight might be impracticable, the patient could be referred to a clinic physician who would assume a personal responsibility for the patient, keeping in touch with him by having the patient report at the clinic, or by visitation at his or her home.

As a result the State hospitals would be less crowded with patients whose psychosis might have been prevented, and in this connection one is reminded especially of alcoholic cases, for whom special institutions should be provided. In other words, there would be a more careful sifting of cases, many of which are made worse by commitment to an insane hospital, and improved by being placed in other kinds of institutions. Furthermore, it would be possible to secure hospital care for many patients so much earlier than is now possible, that many of the worst features of the disorder could be prevented, giving a much better chance for complete recovery, and a more adequate oversight of convalescent patients on parole would prevent many recurrences. Of course all this presupposes the authority which proper legislative measures alone can give, and therefore may be objected to as savoring too much of "paternalism," a term frequently made use of by the conservative, but selfish opponents of any change in political matters which has for its object the future welfare of society. However, as the complexity of society increases, the good of society as a whole becomes the foremost consideration, and individualism must of necessity step to the background.

We have seen this occur in every step in the progress of civilization. "Paternalism," so called, cannot be an evil if exercised by competent persons, for it then becomes that most just and sensible form of socialism which is not paternal, but fraternal, which brings enduring security in prosperity and efficient cooperation in all good works.

And then there is another profession with which the psychiatrist might cooperate with much benefit both to himself and his patients. I refer to the profession of religious ministration. How much more good the priest or the minister might accomplish in cases of mental or spiritual disorder (the terms are really synonymous) if he were trained to thoroughly understand the workings of the human mind, and to recognize the symptoms of pathological conditions therein. Think of the opportunities of the confessor and spiritual adviser! And how much more could be made of them in certain cases of mental disease. Hence the physician of the soul should be enabled to know when to call upon the physician of the body and mind, and, on the other hand, the latter should feel secure in calling for the cooperation of the clergyman.

Better cooperation is also needed with the courts of justice, especially in dealing with juvenile cases of delinquency and defectives of various types, with vagrants, and with alcoholic persons. A permanent staff of psychiatrists might well be a part of the machinery of the law, and we have already come to see clearly the need of some such arrangement in regard to the giving of expert testimony upon the sanity of a defendant.

Conclusions. To sum up the conclusions of this brief outline of the future of psychiatry as a factor in the field of social service, one would say that cooperative education was the keystone in the arch of prophylaxis. Cooperation which is not merely abstract, in the nature of annual conferences and reports between one profession and another, but direct personal cooperation, such as is now obtainable between the worker in the charitable relief agencies and the physicians and nurses of hospital dispensaries.

Cooperation with the schools, the social settlements, charitable relief organizations, the courts, and the clergy. Education in the schools, from public platforms, through the direction of the public library and the press, and more directly in the clinic

and the home in matters pertaining to mental hygiene, by those properly qualified in psychopathology.

If this can be accomplished, our statistics of the ætiology of insanity will not, as now, represent much labor lost, except as resulting in a vast array of ambiguous uncorrelated statements, but more and more efficient labor with a clearer insight; while the benefit to the unfortunate patient and his relatives, which after all is the chief thing to consider, will be immeasurable by any statistical method.

Ward's Island.

A METHOD OF ANÆSTHETIZING TO BE EMPLOYED IN OPERATING ON THE AGED.*

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Since the discovery of ether, in 1846, by William Morton a great deal has been written about anæsthetics and their administration. Much original research and experimental effort has been directed toward the discovery of new anæsthetics, the improvement of their qualities, and the betterment of their modes of administration. This experimental work of discovery has resulted in the adoption and use of many agents that will produce an anæsthesia varying in marked degree as to profoundness, reliability, and safety. Therefore, we have at the present time opportunity to make choice of several general anæsthetics, and also many drugs that may be used to produce a local anæsthesia.

For the average surgical operation the use of ether is most satisfactory, especially when administered by the "open drop method." When all the refinements of this manner of giving ether are used, a "short anæsthesia" results, with little or no nausea and few discomforts. This, then, would appear to be the ideal method, and I grant that it is most efficient and safe except in the following class of cases.

Surgical procedures as ordinarily performed on very old people with the aid of general anæsthetics by inhalation are usually accompanied with great risks and are followed by a very high mortality. Such patients suffer from arteriosclerosis and other changes incident to senility and secondary complications easily develop involving heart, lungs, kidneys, and bladder. These complications, we must confess, are directly influenced by and result from the use of a general anæsthetic administered through the respiratory tract. Hence it becomes our duty in dealing with aged patients to make use of an agent or agents which will produce little or no functional change. For such agents we must look to the list of local anæsthetics which are administered by contact or to such drugs which produce local or general anæsthesia when injected subcutaneously or into the spinal canal. In reviewing drugs we might mention cocaine,eucaine, and novocaine. The employment of these products hypodermically in major operations is very unsatisfactory, the anæsthesia is not complete, there is danger of a lethal dose, and the operator has the anxiety and the excitement of the patient to contend with.

The method of spinal anæsthetization as recommended and practised by Dr. Thomas Jonnesco, of Bucharest, Rumania, has recently received much attention. Profesor Jonnesco punctures the spinal canal at a level appropriate to the region to be operated in. A solution of stovaine is used, which with the addition of strychnine is tolerated by the higher nervous centres. This mode of anæsthetizing, according to the experiments in this country, has been far from faultless. One certainly should hesitate before adopting the practice of making high injections into the spinal canal. The vascular supply within the canal is rich, and the danger of induced hæmorrhage and its sequelæ is sufficiently great to at least make one cautious.

Scopolamine, 0.01 grain, combined with morphine, 1/6 grain, given hypodermically every hour and a half until two or three injections have been given, has been employed as a general anæsthetic. The last injection is introduced one half to one hour before the time set for the operation. This method was introduced by Schneiderlin in 1900 and has been extensively used by Emil Ries, of Chicago, and others. Among the early articles on this subject to appear in the literature of this country was a paper by Major G. Seelig, of St. Louis, recommending the use of the drug as a preliminary to general anæsthesia. He employed scopolamine, 0.01 grain, and morphine, 1/6 grain, to be injected one half hour before the administration of the general anæsthetic. This procedure was adopted by many surgeons and is in more or less general use up to the present time. One of the great advantages of this method is the condition of tranquillity and the drowsy state of mind which it produces in the patient before the general anæsthetic is administered. Scopolamine, however, must be regarded as a dangerous drug. There have been deaths following the careless use of this agent. Such fatalities on investigation have been shown to have resulted from too frequent administration and overdosage. Investigation of the literature shows that no death reported has resulted from the injection of as much as 1/60 grain in divided doses. We may take for granted, then, that the drug is perfectly safe if injected once or twice in small amounts.

Some six years ago I conceived the idea of combining partial scopolamine anæsthesia with local anæsthesia, using 0.1 per cent. of cocaine. I used the scopolamine to control the nervousness and the excitement which usually complicates operations performed under local measures. This technique proved so successful that about one year later, opportunity having presented itself, I began to use partial scopolamine anæsthesia combined with local sterile water infiltration anæsthesia in operating upon the aged. Regional anæsthesia produced by sterile water infiltration is a perfectly safe and effective procedure.

The aim should be to produce complete sensory paralysis of the part. Satisfactory results in the matter of producing regional anæsthesia are dependent upon the technique, and in order to become proficient in this, practice and experience are essential. The operator must be familiar with the anat-

*Read before the New Hampshire Medical Society on May 12, 1910.

omy of the parts, especially of the sensory nerves. The injections may be thus made with accuracy where they will be most beneficial and without unnecessary insertions of the needle. To gain control of the field it is necessary to block the nerves by depositing the sterile water around and in close proximity to them. I must place emphasis on the necessity of producing the condition of absolute nerve block in order to obtain the best results. Considerable fluid and some force must therefore be used. The degree of anæsthesia produced is governed by the accuracy with which the location of the nerves is determined, the amount of fluid injected, and the degree of force used. It is in this particular that experience and the resulting judgment which is developed is most valuable.

Having, therefore, adopted five years ago this, the use of partial scopolamine and local sterile water infiltration anæsthesia, as a method of anæsthetizing to be employed in operating on the aged, and having met with most gratifying success in its use, I would urge a careful consideration of this means of treatment. I am convinced that by this method the management of surgical diseases in old people may be made comparatively safe, the mortality much reduced, and seemingly inoperable cases made operable and curable. Of my three early cases, one was for colostomy to relieve obstruction at the sigmoid, and two were for strangulated herniæ. These patients suffered no pain at time of operation, were able to take food early, and all made prompt recovery. They were all over 80 years of age.

The following report of a few recent cases, describing in each instance the technique used in their management, will thus serve as examples of the treatment employed.

Case I.—Mrs. E. A. B. was eighty-seven years of age on December 2, 1908. She gave a history of a fairly healthy life.

Examination showed a large abdominal tumor with hard nodular masses near the crest of the left ilium and the pouch of Douglas was also filled with a similar growth. Further examination developed a moderately loud mitral murmur, with examinations of kidneys and other organs negative. There was marked arteriosclerosis.

The history of the tumor was as follows: In December, 1907, it was first noticed as a small globular growth. It developed gradually until April 1, 1908, when its size interfered with respiration, producing marked dyspnœa. The patient lived in Nashua and was then under the care of a colleague in that city. After consultation it was deemed advisable, on account of the patient's advanced age to aspirate the tumor. This was done and about four quarts of cystic fluid was withdrawn. This process was repeated from time to time as the cyst would refill, until during the three months preceding December 15, 1908, it was necessary to aspirate once every week in order to give the patient a fair degree of comfort. The last few times the operation was performed the withdrawal of the fluid became very difficult on account of the growth of the surrounding cysts and on account of the change in character and thickening of the fluid.

Early in November, 1908, the family came to Manchester and the patient was then referred to me. Some time later, in view of the fact that we could no longer aspirate successfully, we came to the conclusion that we would try to remove the tumor under local and scopolamine anæsthesia. The matter of assured death or a chance for life was placed before the friends and the operation was decided on.

The patient was given a mild laxative the afternoon preceding the operation, and on the following morning, December 21, 1908, the skin of the abdomen was prepared in the usual way. Broth was given during the night and water freely. At 8.45 a. m. scopolamine, 0.01 grain, combined with morphine, ¼ grain, was given hypodermically. At 10.30 o'clock a second injection was given of scopolamine, 1/150 grain, and morphine, ⅙ grain. At 11 o'clock the abdominal skin in the median line was thoroughly infiltrated with warm sterile water. The injection caused a little discomfort. The patient was in a slight stupor, but could easily be aroused when moved or spoken to sharply. At 11.10 the incision was made in the usual way, the many adhesions separated, the tumor delivered, and its broad pedicle ligated. The abdominal cavity was dried and closed rapidly. Every precaution was taken to make the operation as rapid as possible, and from the time of the incision until the last suture was placed in the abdominal wall the time consumed was sixteen minutes. When the incision was made there seemed to be a slight squirm, as of pain, but at no other time during the operation was there any evidence of suffering. The patient slept nearly all the afternoon in a most natural manner. At 5 p. m. she took water, and at 6 p. m. nourishment. Liquid food was given freely from that time on. At 7 p. m. I visited her, and she conversed on general subjects. After a good night she awoke the following morning and inquired when her operation was to be done. As a matter of fact, from the time following the second injection of scopolamine and up to the morning of the operation the time remains a blank to her. This is pretty good evidence of a painless operation.

The patient convalesced rapidly. The bowels were moved on the third day, and the normal diet resumed. She was propped up in bed from the second day and the headrest was used on the fifth day. Chair and blankets were prescribed on the eighth day. The wound healed perfectly, and now, a year and a half since the time of the operation, the patient remains well, takes railroad trips, drives about the city, and enjoys to the fullest measure her further lease of life.

Case II. Mrs. M., aged seventy-four, was admitted to the hospital May 1, 1909. The patient was a large, fat, flabby woman presenting advanced senile changes.

Examination showed general and advanced arteriosclerosis, mitral regurgitation, and emphysema. The examination of the urine was negative. In the right inguinal region there was a firm, broad mass the size of an orange. This mass was in the inguinal canal, was immovable and very painful. She gave a history of frequent attacks of pain in this region during the last two years, which attacks were accompanied with vomiting. She had always been able to reduce the tumor until about six months before entering the hospital. During these six months the tumor had gradually increased in size and had become more and more painful.

The operation was performed on the morning of May fourth. The patient was prepared in the usual way. At 7 a. m. scopolamine, 0.01 grain, combined with morphine ¼ grain, was given hypodermically. At 9 o'clock a second injection was given of scopolamine, 0.01 grain, and morphine, ⅙ grain. At 9.30 a. m. the skin and subcutaneous tissues in the right hernial region were thoroughly infiltrated with warm sterile water. The patient was slightly delirious, which manifestation showed only in this case out of the series. The incision was made at 9.45 a. m., the sac isolated and opened, and a very large, dark colored, omental hernia was exposed. There was some dark colored fluid in the sac. The dense adhesions were separated and the presenting omentum and sac were excised. The wound was closed in the usual way. The patient slept in a natural manner the greater part of the afternoon. At 6 p. m. she inquired when her operation was to be done. Convalescence was uneventful, and she made a very rapid recovery and was discharged May 22, 18 days after the operation.

I believe this result would not have been possible had a general anæsthetic been given. The omental mass was examined and the report showed beginning gangrene of the distal portion of the omentum with marked arteriosclerosis of the proximal vessels of the same.

Case III. Mrs. B., aged eighty, was admitted to the hospital May 31, 1909, and operated upon on the same

morning. She had been suffering for one week from large bleeding hæmorrhoids.

Examination showed exfoliating clusters of ulcerative hæmorrhoidal veins. Some of the masses were exceedingly large. The patient was feeble, anæmic, poorly nourished, and there was a general arteriosclerosis. A mitral insufficiency had been present for several years. At 8.30 a. m., scopolamine, 0.01 gram, and morphine, ¼ grain, were given subcutaneously. At 9.30 o'clock the patient was placed in the lithotomy position and the anal region was thoroughly infiltrated with sterile warm water. Ten minutes later the sphincter ani was dilated and the hæmorrhoidal masses were removed with clamp and cautery. The attention of the patient was held during the operation by an assistant engaging her in continuous conversation. She appeared not the least narcotized and at the conclusion of the operation made the statement that she had suffered very little discomfort. She made a very rapid recovery and was discharged from the hospital June 14, two weeks from the date of the operation.

Case IV. Mr. X, aged fifty-two, was admitted to the hospital November 3, 1909. The patient was a large, fat man weighing 220 pounds. Since early manhood he had been addicted to the continued use of alcoholics. The amount had been increased from year to year, until at the time of admission the quantity consumed daily was prodigious. There was very marked sclerosis of the veins and arteries. Both the first and second heart sounds were accentuated. There was some dyspnœa but no emphysema. The liver was slightly enlarged. The urine showed no trace of kidney change. Examination further revealed that all the superficial veins were engorged, several being dilated and rigid.

Some three months before admission to the hospital the patient had noticed a rapid enlargement of the veins on the palmar surface of the left hand. This growth soon became very large and pulsated. Pain also developed in the region of the growth and little finger and the suffering soon became intolerable. The little finger gradually became blanched and then dry and black. It was for this condition that the patient came for treatment. Examination of the part showed a left hand swollen on its palmar and dorsal surfaces, and the skin over the region of the palmar arch covered with a network of large pulsating veins. There was advanced dry gangrene of the little finger. Also some three weeks previous to admission one of the pulsating veins had ruptured and the resulting hæmorrhage had been controlled with the utmost difficulty. A diagnosis was made of hæmangioma of the palmar vessels, with obliteration of the blood supply to the little finger and resulting dry gangrene.

A plastic operation to resect the outer metacarpal bone, tie off, and excise the angiomatous tissues and to amputate the little finger was advised and accepted. This case, I wish to state, was the poorest surgical risk I ever accepted, yet I felt free to operate upon him, knowing that I could do so without using a general anæsthetic.

The operation was performed on the morning of November 4th at 8.30 a. m. Scopolamine, 0.01 grain and morphine, ¼ grain, was given subcutaneously. At 9.30 o'clock a large rubber tubing tourniquet was placed about the forearm, and the tissues of the hand were thoroughly infiltrated with warm sterile water. After a lapse of ten minutes the operation was commenced, the little finger being amputated, the outer metacarpal bone resected, and the angiomatous tissue removed en masse, ligatures and sutures applied controlling the hæmorrhage. The plastic effect was very good. The patient was not the least narcotized and suffered no pain. At the conclusion of the operation he walked from the operating room to his own room. He remained well, took nourishment normally, and was up and about until the fourth day, when acute lobar pneumonia developed, involving the lower lobe of the left lung. Five days from the onset of the pneumonia the dullness became bilateral. The initial temperature was 104.5° F. Resolution gradually took place, but on the tenth day an acute gastroenteritis followed, with much distention, another rise of temperature, and great prostration. During nearly all this time the patient was more or less delirious. Heroic measures were adopted in supportive treatment, and at three different times his condition was so hopeless we practically gave him up. The hand looked well for a few days, and then, from that time, made no effort to heal. The sutures gradually cut through, and at last the wound opened up completely and bled copiously. The bleeding was controlled by tourniquet and the wound surface thoroughly cauterized with the actual cautery, to maintain control. There was never any sign of wound infection, no swelling or redness of hand or arm being present. The wound gradually filled in as the patient's general condition improved.

On December 23d he was discharged, strong and apparently well. The wound was almost healed and the result was promising. Now the lesson this case should teach is plain. If a slight surgical interference should overbalance such a weak organism and lead up to complications so easily, what might one expect to happen to such a patient operated upon under ether or chloroform? We might safely answer that the result would be fatal and promptly so.

Case V. Mr. B., aged seventy-nine, was admitted to the hospital on November 9, 1909. He complained of a growth on the dorsum of the right hand, which had developed in one year. Six months previous had had it removed by paste treatment, but it had promptly returned. Examination showed a large fungous tumor, involving the greater part of the dorsum of the right hand. The patient had general arteriosclerosis, chronic bronchitis, and prostatic hypertrophy. He had the appearance of a rather weak old man.

The operation was performed on November 10th, at 9.30 a. m. The same technique was employed as used in Case IV. The growth was removed down to the deep tissues and well out into healthy skin. The surface was then covered with Thiersch's skin graft strips taken from the same forearm. The patient suffered no pain or shock, and made an uninterrupted recovery, except for discomfort due to prostatic hypertrophy. After some prophylactic x ray exposures had been given to his hand he was discharged on December 13th.

You will note that the dose of scopolamine given in these cases is of varying amount. Operations upon the extremities require less of the drug to obtain the necessary degree of control. Such variations in dosage must be determined by the operator, according to his experience and judgment.

Conclusion.

In conclusion I must again urge the importance of this method of treatment in the management of surgical diseases in old people. We all know the mortality which results from the use of a general anæsthetic upon those of pronounced senility. We realize the resulting complications of heart, lungs, kidneys, and bladder, which are very likely to occur. We easily get into the habit, therefore, of classing these patients as inoperable. In view of this safe and accurate method of anæsthetizing and, further, in view of the fact that patients operated upon in this manner continue to be nourished regularly and do not suffer from functional disturbance of the stomach or any other organ, why should we hesitate? Why should we carelessly doom these old men and women to shortened lives when we can so surely tide them over and guide them to prompt recovery and comfort.

967 Elm Street.

TWO CASES OF NONTRAUMATIC GINGIVAL HÆMORRHAGE.

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Leaving out of consideration hæmorrhage occurring in consequence of trauma or of ulcerative or necrotic processes, we find it to be one of the end phenomena of various maladies, of diseases in which

the circulation of the blood becomes obstructed, and vitiation of the secretions and structures subsequently ensues, as in the diseases of the liver, cirrhosis, icterus, infectious icterus of Weil, yellow atrophy, cancer, and of ailments that have their seat in the blood, as in phosphorus poisoning, and in the anæmias (especially progressive pernicious anæmia). Epistaxis is of frequent occurrence; in fact, it is one of the common phenomena of cirrhosis and occurs frequently in the other forms of hepatic disease. Hæmorrhages into the retina, into the pleura, and into the peritonæum are rather rare, but hæmorrhage from the gums is the rarest form of all. Quincke mentions it only in connection with acute yellow atrophy of the liver and *Echinococcus alveolaris multilocularis.*[1] Mikulicz,[2] in his treatise on the diseases of the mouth, mentions only the bleeding gums of scurvy.

In a long practice, extending over many years, including hospital service both as resident and as visiting physician, I have met with but two such cases, and because of their rarity and their presenting certain features which seemed to me of interest —one, more especially, which is set forth further on—I have thought them worthy of record.

Case I. A. S., æt. fifty-one, widower, five feet three inches tall, weighing about 110 pounds, buttonhole maker. I had known him in a general way for some time, as he was a member of a small society to which I was the physician, but had never treated him before.

On February 25, 1893, I was called to see him. I found him up and about. He complained that he had been bleeding from the gums for the last five or six days. He had been attended by an excellent physician of the neighborhood. I learned from him that, so far as he knew, he had no special ailment, only that for quite some time he had felt himself growing weaker and latterly had had to give up work—that is, the superintending of his shop. He had also suffered for the past year from indigestions, which he believed to be due to his bad teeth, which made mastication very difficult. He was very pale. A physical examination, disclosed nothing special except a fullness and force of pulse out of all proportion to the heart's action. No splenic enlargement. Palpebral and buccal mucous membranes pale, blanched. Examining his gums, I found that he had lost quite a number of teeth, that some were loose in their sockets, and of others only stumps were left. The gums about the loosened teeth and the stumps were eroded, ulcerated. Blood poured out quite freely from a number of these ulcerated points.

The colleague who had preceded me had used all the astringent remedies known to him from the mildest to the strongest, but without avail; the bleeding continued and, as the patient said, if anything, with still greater force. I prescribed for him a rather mild astringent lotion to be applied topically, and for internal medication a pill of iron, quinine, and arsenic, to be taken three times a day, and fluid extract of ergot, 15 drops, to be taken every three hours. All food to be given cold: Milk, malted milk, cocoa, cold meat or chicken broths, the yolk of egg beaten up in water with sugar or salt, as he preferred. At the expiration of twenty-four hours the bleeding was very much less, and at the end of forty-eight hours it was arrested. The ergot was continued as before for twenty-four hours more, then it was stopped and a one grain pill of ergotine (Bonjean) given three times a day. I saw him once a day for the next four days, and he was apparently doing very well, gaining some in flesh and considerably in strength. His diet was now enlarged, and he was allowed broiled lamb chops, hashed up fine so as to require little or no chewing, baked potatoes, light cereal puddings, a little cold tea with milk, and a little cold coffee. Ten days later I saw him again and he complained of great weakness; his legs would not hold him up and he was either in the rocker or on the bed. I directed him to discontinue the pills and ordered instead compound syrup of hypophosphites with gumme and strychnine one and one half teaspoonfuls three times a day.

About ten or twelve days later I received an urgent call to see him; he was bleeding again from the gums and very profusely. I prescribed the treatment that had proved successful before, but without avail. Despite all I could do, the bleeding continued. An eminent surgeon was called in, but surgery gave no hope. On the fourth day another physician was called to attend the patient and I discontinued my visits.

I learned subsequently that, thirty-six hours after I had discontinued my attendance, the bleeding let up considerably, though not altogether. He would bleed a little for a few hours, then it would stop, to recur again after some hours or on the next day. Thus he lingered along till the 8th of April, when he had a sudden and profuse hæmorrhage and died. Death occurred about six weeks after the setting in of the first hæmorrhage.

Though no examination of the blood had been made in the case (at that time these examinations were but rarely made), I had set it down in my record as a case of progressive pernicious anæmia. Besides this, the disease which really carried him off, I noted the development of arteriosclerosis

Case II. November 6, 1908. B. S., a farrier, æt. 53, married, the father of four children, usually weighed 153 pounds, to-day he weighed but 123¼ pounds, five feet two inches tall, had never smoked; took a little whiskey with each meal, but had taken none for the last few weeks.

He had always been in good health till three or four weeks ago. Then he began to have a sense of pressure in the epigastrium and a feeling of burning in both sides. He belched much. He desired to eat, but was afraid to do so because he was very constipated. He had always eaten in moderation and only very simple fare. He did not eat at night. In summer he drank two or three glasses of water a day; in winter not so much. Occasionally he took a little plain seltzer. He goes to bed at about 10 p. m. His bowels had always been constipated so long as he could remember; in the last few weeks obstinately so. No headaches. Sleep had been poor; he fell asleep soon after going to bed, slept for a short time, then woke up and remained awake—could not fall asleep again. Breath was terribly offensive. The tongue was heavily coated with a grayish white coat. The teeth were in very bad condition; some were wanting altogether, of others only stumps were present. The gums around these stumps were ulcerated and seemed rather loose about some of the teeth. Examination of the abdomen and abdominal organs disclosed nothing abnormal. Temporary directions: Diet, a glass of milk (warm, with a pinch of salt added) every two hours. Oatmeal (thinned with milk after it was served), morning and evening. He was allowed to have a few stewed prunes in the morning with his breakfast (as he asked for them). Medication: Tincture of nux vomica, three drachms; Fowler's solution, one drachm. Of this he was to take three drops in a teaspoonful of water every two hours. For the bowels, an enema pro re nata.

November 8th. Patient felt better. Bowels acted spontaneously yesterday and to-day Looking into his throat (previous to the introduction of the stomach tube), I saw the fauces and uvula rather congested, and did not introduce the tube. He was permitted to have a thin slice of bread with every other glass of milk. After two days, if he continued to feel as well, he could have a soft boiled egg, morning and evening, and the oatmeal at noon only; the milk still every two hours as before. He was also told to take a pepsin pancreatin tablet with the egg. The throat was to be gargled with a solution of boric acid every three of four hours.

November 12th. Patient said he felt well in his stomach. The only complaint he had was of the very bitter taste in his mouth. I told him to leave off the nux vomica mixture (as it might possibly be the cause) and take a strychnine tablet, 1/100 grain, every two hours; also to take a tonic bath.[3]

[1] Quincke und Hoppe Seiler, *Krankheiten der Leber.*
[2] Mikulicz und Kümmel, *Krankheiten des Mundes.*

[3] As administered in the various hydriatic institutes; the main feature thereof is the Scotch douche.

November 15th. Sclerotics were very yellow. No discoloration of skin. Said his urine was highly colored. His breath was still very offensive Felt weak. I sent him over from the office to take the tonic bath, and when he came back he said he felt much better—braced up. Diet: Vegetables, cereals, milk, bread, soft boiled eggs. Medication: Essence of pepsin, two ounces; diluted hydrochloric acid, eighty drops. Of this he was told to take two teaspoonfuls in a glass of water with dinner and supper. For the commencing icterus I prescribed sodium salicylate, ten grains, three times a day, between meals.

November 16th. A speciment of his urine was brought in. It contained much bile. Color equal to No. 6 of Wittlhaus's color table. He had no pain, but felt weak; had spells of faintness coming over him. He was told to take from twenty to thirty drops of aromatic spirit of ammonia when necessary. Also strychnine sulphate, 1/50 of a grain, every four hours.

November 20th. The daughter telephoned that he had been bleeding from the gums for four days. Advised calling in his family physician to see him.

November 21st. Evening. The family physican called me up and said he had not been able to check the bleeding. I advised painting the gums with a 1 to 1,000 solution of adrenalin and giving internally suprarenal extract one grain every three hours.

November 22d. Saw him to-day at 4. The hæmorrhage had soon been arrested by the adrenalin and suprarenal extract, and he had not bled since the first painting. Pulse was fair, 72 beats a minute. Was told to continue the suprarenal extract, two grains, every four hours, and to apply the solution locally every four hours. Gargle and rinse the mouth with a solution of boric acid.

November 23rd. Sent Dr. O. to see him. He reported the heart's action so rapid that the sounds could not be distinguished. There had been a streak of blood in the sputum the night before. I stopped the suprarenal extract, and gave him strychnine, 1/50 grain, three times a day, also fluid extract of ergot, fifteen drops, every three hours. Allowed some thin oatmeal (he asked for it).

November 24th. Dr. O. reported that the patient was distinctly jaundiced (whole body yellow). Directed sodium phosphate.

November 29th. Saw him to-day. He had not bled again. He was jaundiced, yellow, lemon colored. Last night he complained of pain in the epigastrium. His daughter applied a cold compress and he was relieved by it. He had no pain to-day. The urine was lighter than before. The stools were light brown. No itching. Directed sodium salicylate, ten grains (it had been stopped, when the bleeding set in) four times a day; also an enema of water, two quarts, at a temperature of 85° F., to be given daily. Diet same as before.

December 15th. *An induration could be felt over the region of the gallbladder*, midway between the bend of the right costal arch and the umbilicus. It extended beyond the median line and over to the left of it. No soreness. Patient said that he felt stronger; was up and about, and went to bed only when his rooms got cold. But he had no appetite. Milk bloated him very much and caused distress. To try condensed milk, and milk with tea; vegetable soups; broths. Continued the sodium salicylate, increasing the dose to fifteen grains.

The case was at once cleared up; the patient was suffering from cancer of the liver.

December 28th. The face was of a light copper color, while the body was of a greenish yellow. In spots it was altogether green. The tumor, not so prominent as before, seemed to have sunk down deeper. The left lobe was indurated. The liver extended three inches beyond the border of the right costal arch, and in the epigastrium it extended down as far as the crease (a point three inches above the umbilicus).

January 21 1909. A tumor, well defined in outline, distinctly palpable about the region of the gallbladder on, what I would call, the linea costoumbilicalis dextra.

January 24th. Last evening Dr. O. telephoned that the patient was again bleeding from the gums. I suggested resuming the treatment that had previously proved successful. This morning Dr. O. reported the treatment not effective. The gums had shrunken away from the teeth. Try traumaticine or the application of hot (almost to boiling) water.

January 26th. The bleeding had continued despite all we could do. The blood poured out from the gums, bright red blood. As he was almost pulseless, I advised that he be given some whiskey. None being at hand, the doctor gave him one half ounce of an alcoholic preparation of beef and cereals which happened to be on hand. He took it, held it for a few seconds in his mouth, then swallowed it slowly. Coagulation seemed to have set in, for the bleeding was arrested.

January 28th. The oozing from the gums stopped for a time last night under the action of adrenalin and ice. This morning early he was seized with nausea and vomited quite a quantity of coffee ground looking matter. Apply an ice bag over the stomach, and give champagne with ice, and strychnine hypodermically. If restless he should receive morphine hypodermically.

January 31st. In *statu quo*. Still some bleeding from the gums. Vomited occasionally coffee ground looking matter.

February 1st. Patient died this evening.

Of all hæmorrhages occurring in the course of the groups of maladies named at the outset gingival hæmorrhage is the most formidable, because of the difficulty, nay almost impossibility, of arresting it: the blood oozes from so many points and the remedies topically applied are washed away so quickly, too quickly to have much if any effect. And not for this alone is it so formidable. The red blood flowing out, continuously filling the mouth of the patient and causing him to spit it out at short intervals, is most terrifying to him and his family.

Can we prevent this bleeding?

Reading carefully the history of the two cases here recorded, we find that they have one feature in common, namely, in both the gums were eroded and shrunken away from the teeth. Though one swallow does not make a summer, it is nevertheless a proper conclusion that if such a condition of the gums as described exists and we can remedy it at an early stage of the maladies named, we may prevent the occurrences of gingival hæmorrhage.

This was demonstrated to me almost to a certainty in a case of progressive pernicious anæmia that I had under observation for the past two years:

Case III. A man, about sixty-three years old, a widower, who weighed at one time from 180 to 190 pounds and stood five feet ten inches in height, had no upper teeth at all, having had them removed, and the gums were firm and hard. Below, the dentist had left the four incisors: the rest of the gum was hard and firm like that of the upper jaw. He had had plates made and always wore them until a short time before his demise. About eight months before the lethal exitus nasal hæmorrhage set in and recurred at longer or shorter intervals almost to the end. It was, however, always promptly checked by thorough plugging of the affected nostril. Even the severe hæmorrhage that occurred about 10 p. m. about ten days before his death was arrested in less than an hour by the procedure mentioned. In the last eight or ten days he had not worn his plates any more (they seemed to annoy him) and the pressure being removed, blood began to ooze from the lower gum from about the four lower incisors, where it had shrunken away from the teeth. However, it was only trivial and the patient was already in a sort of semi-stupor, so that it did not worry him, and no attention was paid to it.

I am certain that, had these four teeth been also extracted at the time the plates were made, and this part of the gum allowed to heal and harden with the rest, there would not have been even any gingival oozing.

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DOES INTERNAL MEDICATION TEND TO ABORT OR CURE ABSCESS AND THE TENDENCY THERETO?*

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In a consideration of this rather important subject we at once ask the question: What is an abscess and why should an abscess occur in any individual?

For convenience the best definition of an abscess appears to be a circumscribed cavity of new formation containing pus. Pus in a natural cavity is a purulent effusion and not an abscess, unless it is encysted in these localities by walls formed of inflammatory tissue. It is evident that an abscess never occurs unless there is some deviation from the normal as regards the constitution of any individual.

Some one has said that we should go back to the grandparents in treating a given patient. One might also say that we should begin treatment before our patient is considered a patient. Disease does not occur like a flash of lightning out of a clear blue sky. A gradual deviation from the normal is always present before well marked symptoms are in evidence. The day will probably come when every person will be subjected to a careful examination when supposed to be in a condition of health and careful data recorded from time to time regarding his or her health status.

We all know that certain persons are predisposed at all times to the development of abscesses. These individuals, if examined very carefully at different times when supposed to be in a condition of health, will undoubtedly show some abnormity in their makeup that will give us some light on the subject. Let us find out his or her opsonic index or resistance to disease; their tendency to leucocytosis; the findings denoted by the blood count; the amount of urine normally secreted and the character of the same; the condition of the sweat glands; the lungs; the heart; the arteries; and the general nervous system. Add to this the condition of the stomach and bowels and their functions as peculiar to the particular individual. A normal condition for one person may be quite the reverse for another. Although leucocytosis is not an infallible guide, in the majority of cases it will denote some abnormity.

Internal medication by the use of medicines that are natural constituents of the body will do much toward increasing the bodily resistance. These medicines are the oils, iron, phosphorus, and the whole line of preparations known as internal secretions.

Abscess of the brain is as a rule secondary to other suppurating processes, though it has been known to be a sequel to influenza. Little can be said in reference to internal medication in brain abscess except what has been said in reference to predisposing causes of a constitutional condition. By proper medication the primary condition may be cured but not brain abscess once it is developed.

In amygdalitis and middle ear and mastoid infections the streptococcus vaccine when given before the tissues break down will cause the inflammation to disappear without suppuration.

Appendicitis has been cured by the administration of streptococcus and colon bacilli.

In abscess of the appendix we may anticipate the same by attention to the ætiological factors that predispose to appendicitis such as constipation, autointoxication, intestinal indigestion, and gastroenteritis. By the administration of internal medication along with immunizing against the colon bacillus and streptococcus infections we unquestionably tend to abort abscess of the appendix.

In glanders accompanied by multiple abscesses autogenous vaccine has cured. The use of serum to produce immunity in typhoid and the antiseptic treatment of the disease may prevent extension into the gallbladder and a subsequent abscess. Internal medication in a case of pyelitis may abort a suppurating nephritis or surgical kidney. Internal medication in a case of dysentery, malaria, or tropical fever may prevent a liver abscess. Serum treatment of pneumonia or tuberculosis may abort an abscess of the lungs or mediastinum. Vaccines have been used to some success in pyæmia, pyosalpinx and tuboovarian abscess by inducing opsonins. *Bacillus coli* is often found in pelvic inflammations. Good results have been secured by the use of the *Staphylococcus aureus* and the *Bacillus coli*. In tuberculosis of the glands of the neck the resistance has been raised by the use of serum to the extent of eliminating a proposed operation. Tuberculin has in these cases done wonderful work. By curing cases of gonorrhœal arthritis with gonococcic serum we surely abort an abscess of a joint which may be filled with gonococci, as the writer has seen in a recent hospital case. Diphtheria antitoxine is an instance where a serum acts to abort a coagulation necrosis process which is so characteristic of the disease. Abscesses of the skin, boils or furuncle, furunculosis and carbuncle are all due to some disordered condition of the system. In the latter the staphylococcus serum has worked well along with supporting treatment; the use of strychnine as a stimulant with doses of opium to relieve pain.

When pus is present, aside from the serum treatment the writer knows of only one drug that will act internally to modify all suppurating processes in a most decided manner. This drug is calcium sulphide in one half to one grain doses, three times a day, for an adult. For a child from one twentieth of a grain to one tenth of a grain, three times a day.

In conclusion one can hardly refrain from making the prophesy that serum therapy will be the internal medication of the future; that it has come to stay; that it is the handwriting on the wall for certain lines in surgery; and finally we must be convinced that internal medication does tend to abort or cure abscess when the indications have been carried out in the manner herein suggested.

428 Forty-seventh Street.

*Read before the Long Island Medical Society, June 7, 1910, forming a five minute paper of a "symposium" on the general subject of abscess.

Our Readers' Discussions.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

C.—How do you treat œdema of the lungs? (Closed July 15, 1910.)

CI.—How do you treat chronic nasal catarrh? (Answers due not later than August 15, 1910.)

CII.—How do you treat other electric shocks than that of lightning? (Answers due not later than September 15, 1910.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED*) that the answers be short; if practicable no one answer to contain more than six hundred words.*

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The prize of $25 for the best essay submitted in answer to question XCIX has been awarded to Dr. Louis J. Spivak, of Philadelphia, whose article appears below:

PRIZE QUESTION XCIX.

THE TREATMENT OF GONORRHŒA IN THE MALE.

By Louis J. Spivak, M. D.,
of Philadelphia.

The disease gonorrhœa in the male has, within recent years, assumed a meaning, much broader in scope than what it meant not so very long ago. Formerly gonorrhœa was nothing more than a little strain, or a "little running range," a disease just as natural for a young man to get, as it is for children to get measles or whooping cough. Now, commencing with the primary seat of infection, the anterior urethra, and going through the rest of the genitourinary tract, as gonorrhœa will do with its many complications and sequelæ, we readily see that this disease is not one to be underestimated as a little thing.

Every case of acute anterior urethritis, in the virgin urethra, if not properly treated from the start, will lead to results that not only menace the health of the patient himself, but continually threaten the well being of many innocent persons. Every uncured case of gonorrhœa is like a stick of dynamite, capable of lighting up a good deal of trouble, due to the great vitality of the gonococcus in the genitourinary tract. The treatment of gonorrhœa is something more than the mere prescribing of a capsule and an astringent injection.

Every case must be studied and treated in a scientific manner. Get a history of the case. How long has the patient had this present attack? How many attacks has he had? Inquire into the amount of discharge and what it looks like. How often is he urinating? Must he get up out of bed to urinate? Examine the urine macroscopically, by having the patient urinate in two glasses. Look for presence of pus, or if urine is clear for shreds. If possible and practical study the urine microscopically. There are many cases of urethritis in which the gonococcus is not at fault. Knowing this fact, you can give the patient a better prognosis as to duration of his disease.

A word as to prophylaxis may not be amiss. 1. Education of the growing boy to the uses and abuses of his sexual apparatus. Teach him the pitfalls to which he may succumb. This education can be given by the father or by the high school teacher. 2. The segregation and medical examination of prostitutes may not eliminate gonorrhœa, but it will surely decrease it. 3. Urinating immediately after intercourse and syringing the anterior urethra with a 1 in 3,000 solution of potassium permanganate or one of the organic silver compounds have been found to be efficacious in many instances in preventing urethritis.

Treatment of acute anterior urethritis. The average case of acute anterior urethritis is cured in five weeks. There are a few cases which are cured in less time, and many that last longer, but the average duration is five weeks.

The abortive treatment has generally proved to be unsatisfactory, because the physician sees the case too late for this method of treatment, and secondly the strong astringent solutions, that are used, leave bad effects, often causing very severe complications.

The ideal way of treating a case is to put the patient to bed, at complete rest. Give him laxatives, and put him on a light diet. In conjunction, the anterior urethra is irrigated twice daily, with a solution of potassium permanganate starting with a 1 in 4,000 solution and increasing finally to a 1 in 2,000 solution; also give ten minims of the oil of sandalwood three times a day internally. With this treatment the patient usually gets well in from seven to ten days. In patients who can come to the office of the physician daily, irrigations of the anterior urethra with a 1 in 3,000 solution of potassium permanganate will prove efficacious. (The Valentine irrigating apparatus is a great help in this method of treatment). The discharge ceases, and the urine clears up in about two weeks. If treatment is stopped, the local symptoms will reappear, but the use of an astringent injection like the Jefferson Medical College injection, 50 per cent., the formula of which will be given later, will readily end the trouble.

A majority of patients will, however, not consent to remain in bed for a week of special treatment, nor will they agree to come daily to the office. These patients respond to the following line of treatment in five weeks as already mentioned: 1. Diet. The patient is told not to eat any salt meats, salt fish, or any other highly seasoned foods; nor any vinegar, cheese, tomatoes, strawberries, asparagus, and especially not to touch any alcoholic beverages nor have sexual intercourse. 2. Hygiene. He is instructed to keep his penis clean by bathing it in a cup full of hot water to which has been added a teaspoonful of ordinary table salt. He is cautioned not to get any of the discharge in his eyes. He is told to wear a little pouch on his penis. This little bag is filled with cotton that catches up the entire discharge, the cotton being changed every few hours. 3. Internal treatment. *a.* Direct patient to

drink plenty of water. *b.* To render urine aseptic give one grain of methylene blue, three times a day, or five grains of hexamethylenamine, three times a day, warning patient that his urine changes to a green if hexamethylenamine is used or to blue if methylene blue is employed. *c.* To render urine bland and unirritating give balsamics in either of the following methods:

I.

℞ Salol, ...gr. ccxi;
Oleoresin of cubeb, ...gr. cxiv;
Copaiba, ...gr. ccxi;
Pepsin, ...gr. xxiv.
M. et pone in capsulas No. xxiv.
S. One capsule three times before meals.

II.

℞ Oil of santal, ...ℳx.
Pone in capsulam No. I.
S. One capsule three times before meals.

III.

℞ Oleoresin of cubeb, ...gr. ii;
Copaiba, ...gr. iii;
Matico, ...gr. i;
Oil of santal, ...ℳii;
Salol, ...gr. ii;
Takadiastase, ...gr. i.
M. et pone in capsulam No. I.
S. One capsule three times a day before meals.

Prescription number one is used early in the disease in conjunction with the methylene blue, the latter after meals. The other prescriptions are used later in the disease without urinary antiseptics.

4. Local Treatment. Patient is told to use a hand injection in the following manner: He obtains a small rubber nozzled, blunt pointed syringe, capable of holding two drachms. He first urinates, then having filled the syringe with medicament ordered, he injects it into his anterior urethra, closes the lips of the penis and holds the solution about five minutes. This injection is done twice daily. At first the medicament used acts only as a cleansing agent, later as the discharge decreases and the urine clears up, more and more astringent injections are used.

1. First to end of second week: Potassium permanganate, 1 in 4,000, increasing to 1 in 2,000. Permanganate stains, but can be cleansed by a dilute solution of oxalic acid. Or a solution of one of the organic silver compounds is used.

2. Third to fourth week: Potassium permanganate, 1 in 2,000.

Red injection:

℞ Zinci sulphatis, ...gr. xvi;
Plumbi subacetatis, ...ʒss;
Fluid extract krameriæ, ...ʒiv;
Tinct. opii, ...ʒiii;
Aquæ destill., ...q. s. ad ʒvi.
M.

White injection:

℞ Zinc sulphate, ...gr. xv;
Lead acetate, ...gr. xxx;
Bismuth subnitrate, ...ʒiv;
Glycerotannin, ...ʒiv;
Colorless fluid extract of hydrastin, ...ʒiv;
Mucilage of acacia, ...ʒi;
Water, ...q. s. ad ʒvi.
M.

Jefferson Medical College injection:

℞ Zinci sulphocarbolatis, ...gr. xxx;
Hydrargyri chloridi corros.; .....gr. ½;
Pulv. acid. borici, ...ʒii;
Phenolis, ...ℳxv;
Boroglyceridi, 20 %, ...ʒii;
Aquæ, ...q. s. ad ʒvi.
M.

The formula here given for the Jefferson Medical College injection is full strength; fifty per cent. is usually employed. It makes a very good astringent injection, and is used only when the discharge stops, the urine clears up and shows the presence of shreds. A good way to use it, is, as the urine gets more and more free from shreds to inject into the bottle a syringeful of water for every syringeful of medicament used; thus diluting the strength more and more in order to obviate a urethorrhœa caused by the strength of the injection.

3. Fourth week to end of disease: White injection, Jefferson Medical College injection, fifty per cent., increasing if necessary to full strength.

When is a patient cured? Patients usually think that they are well, when the local symptoms cease; but they must be taught that they are not well until their urine is entirely free from shreds.

The beer test is useful in showing whether a patient is cured. He is told to drink a couple of glasses of beer on the day before coming to the physician's office. If he is not cured the urine will again become cloudy, but if it remains clear, he is well.

The only positive and scientific method of demonstrating a cure is the continued absence of gonococci from the urine, after several examinations. Acute anteroposterior urethritis may commence as such from the start, or it may follow an anterior urethritis in the course of the disease, or after some indiscretion by the patient, or after some error in treatment.

The discharge stops and the patient feels elated over that fact, but both urine glasses show pus. The patient passes water very frequently, even getting up out of bed four or five times to urinate. The treatment here is different. All injections are stopped. Continue the balsamics and give a sedative mixture.

℞ Tinct. belladonnæ, ...ʒss;
Sodii bromidi, ...ʒiv;
Tinct. opii camph., ...ʒiss;
Liquor. potassii, ...ʒii;
Syrup. zingiberis, ...ʒiii;
Aquæ, ...q. s. ad ʒvi.
M. et sig. Tablespoonful three times a day with water.

As the local symptoms abate, and the patient is urinating normally, instillations into the posterior urethra are made use of, three or four times a week. These instillations may be made with a soft rubber catheter or better with a Keyes-Ultzmann syringe using one of the organic silver compounds, and depositing about ten to fifteen minims of the medicament, just past the bulbomembranous junction. You know that you have deposited the medicine properly into the posterior urethra by the non-appearance of the medicine at the meatus after the withdrawal of the instrument.

Chronic urethritis. There are a number of cases of urethritis that take a long time to cure. There is usually a cause for the persistency of the disease. In many of these cases you will find that the patient has been drinking or has been indulging in sexual excesses. Where these acts of disobedience can be eliminated, look for some pathological trouble in the genitourinary tract.

Stricture or narrowing of the normal urethral calibre is the cause of about fifty per cent. of

chronic gonorrhœal cases. If the contracture is at the meatus, do a meatotomy. In the other cases of stricture, gradually dilate the urethra with sounds until the normal calibre is reached, about 29 or 30 French scale. Do not make the patient bleed, and do not pass instruments, if the urine becomes cloudy

In many chronics the anterior urethra will be found studded over with enlarged follicles. These are easily palpated by passing a bougie into the anterior urethra, and passing the fingers externally along the urethra. These follicles are filled with pus, broken down epithelium, and gonococci.

This condition is treated by coating a bougie with Finger's ointment, and passing the instrument into the anterior urethra, and rubbing the urethra over the sound. This massaging movement empties the follicles and coats the anterior urethra with the medicament that heals these follicles.

Finger's Ointment.

℞ Iodine, ...gr. v;
Sodium iodide, ...gr. xxx;
Olive oil, ...℥i;
Lanolin, ...q. s. ad ℥i.
M. Ft. unguentum.

In conjunction the patient is given balsamics internally and Jefferson Medical College injection, fifty per cent. strength.

In a number of the chronic cases, the prostate gland is found to be either studded with follicles or shows parenchymatous enlargement. These patients will complain to you of a "morning drop" and of matter appearing at the meatus after defæcation. They also tell you that they are continually getting new attacks of gonorrhœa. The gonococci have become lodged in the prostate gland and on the slightest provocation set up trouble. Examination of the prostate gland by digital palpation through the rectum discloses the changes in the prostate gland. On slightly rubbing this gland, a material appears at the meatus, whitish and gummy in character, and containing many leucocytes, broken down epithelium, and usually gonococci.

The treatment for this condition is massage of the prostate gland, best done by first filling the bladder with a solution of potassium permanganate, 1 in 3,000, and then with the patient in the knee chest position on a table and with the index finger in the rectum gently massage the gland from side to side and up and down. Too vigorous massage and massage on an empty bladder have frequently caused a violent posterior urethritis, cystitis, and orchitis.

The use of silver nitrate is of great benefit in chronic cases. It is to be instilled with a Keyes-Ultzmann syringe starting with a solution of silver nitrate, two and a half grains to the ounce and increasing to fifteen grains to the ounce.

Chronic patients get better not by any one line of treatment, but by using combinations; use irrigations with potassium permanganate, sounds, massage of anterior urethra with Finger's ointment, instillations of silver nitrate, and massage of prostate gland, depending on the cause of chronicity. Do not pass a bougie and massage the prostate gland at one sitting. Internal treatment in chronic cases is of little value, although the balsamics are generally used. Chronic patients will take a long time to get well, often from three to four months, sometimes longer, but the patient must have patience and be obedient, and the physician must show persistency and care.

A little urethral discharge will often be kept up by a few congested patches, erosions in the urethra, or by inflammatory changes in the veru montanum or sinus pocularis. These conditions can be effectually treated by applications of strong solutions of silver nitrate with the use of the endoscope.

Complications of anterior urethritis. 1. Phimosis. This is treated by soaking the penis in a cup full of hot water to which a teaspoonful of table salt has been added. If very painful a few drops of laudanum are added to this salt solution. If there is much swelling, a dressing of lead water and laudanum is put on. The treatment for the urethritis goes on just the same. 2. Paraphimosis. Gentle measures should be tried at first to reduce this. Grasp the shaft of the penis with the left hand, holding it tense, and with the fingers of the right hand enclosing the head of the penis, push it back into place. If the ring back of the glans has become swollen and tense and œdematous do multiple puncture on it, squeeze out the serum, and the glans will go back, especially if it is compressed with a little bandage around it. The glans should of course be lubricated. When impossible to reduce by this method incise the contracting ring on the dorsal surface. 3. Œdema of the penis is treated in the same manner as phimosis is treated. 4. Infected juxtaurethral sinuses, are best opened and drained. 5. Cowperitis is treated by rest in bed and applications of triple ointment and local heat. If suppuration forms, open and drain.

Triple Ointment.

℞ Unguent. hydrargyri, } ....equal parts of each ingredient.
Unguent. belladonnæ, } ....equal parts of each ingredient.
Icthyol., 25%, } ....equal parts of each ingredient.
M. ft. unguentum.

Complications of posterior urethritis. 1. Acute prostatitis is treated by rest in bed; stop all local treatment. Laxatives and a light diet are given. Internally give a sodium bromide mixture, and oil of sandalwood, ten minims, three times a day. Apply heat to the perinæum by a hot water bag, or better, inject about six or seven ounces of water at a temperature of from 112 to 114° F. into the lower bowel. Do not inject more water, as it will not be retained. In addition use one of the following suppositories:

℞ Icthyol., ...3ii;
Ol. theobrom., ...q. s.
Ft. suppos. No. xii.
S. Insert one night and morning.

℞ Ext. belladonnæ, ...gr. iii;
Pulv. opii, ...gr. vi;
Ol. theobrom., ...q. s.
Fnt. suppos. No. xii.
S. Insert two or three three times a day.

If pus forms in the prostate, an operation may be necessary, but often the pus will evacuate into the anterior urethra, especially if a very gentle massage of the prostate gland is performed. 2. Epididymitis and epididymoorchitis are treated by stopping the use of hand injections. The sodium bromide mixture is given internally, as is also 10 minims of santal oil, three times a day. Locally, triple oint-

ment is applied with the use of a suspensory bandage. If the orchitis is very severe the patient must be put to bed and given light diet. Triple ointment is applied to the testicle. Applications of a saturated solution of magnesium sulphate, to the part has very frequently caused an abatement of pain and swelling. I have seen this treatment used a great deal in the genitourinary wards of the Philadelphia Hospital with great success. 3. Seminal vesiculitis is treated by stripping the seminal vesicles. 4. Gonorrhœal rheumatism is treated by rest and ichthyol applications.

The best treatment for all complications of urethritis is the use of antigonococcic serum, but this treatment has the serious objection of being too expensive.

1330 North Franklin Street.

Dr. C. H. Wood, of Glendora, California, says:

Gonorrhœa, being a purely local disease at its onset, requires local treatment for its cure. The difficulty resides in selecting a method that is efficient in attacking the gonococcus, yet does no injury to the urethral mucosa. To attain this end, urethral treatment must be performed with the utmost gentleness, and medicaments chosen which are germicidal in effect, but nonirritating to the delicate and inflamed tissues. After trial of many different treatments, I have come to rely upon the following method, with results that are eminently satisfactory:

The diagnosis having been confirmed by the microscope, the patient is directed to present himself at the office once a day, or better twice in the beginning, if it is possible. After urinating, he receives an irrigation of the anterior urethra of one quart of warm, sterile, normal salt solution, with the reservoir elevated not more than two feet. The solution is made with distilled water in order to minimize its irritating effects. The irrigations are given for the purpose of cleansing the urethra of surface pus and cocci, and possibly for their effect in altering local circulatory conditions. Following the irrigation the patient reclines, the glans is cleansed, and from one to two drachms of an organic silver compound solution is injected with a blunt nozzled glass syringe, enough being used to very gently distend the urethra. A urethral clamp is then placed on the glans and the solution allowed to remain for from twenty to thirty minutes. If the solution can be retained longer it will do more good. A patient may keep the clamp in place without inconvenience and go about his business. The injection is given in the office for the reason that the silver solution should always be freshly prepared at the time of its use. I have found that frequently a solution will begin to grow irritating after standing as short a time as four hours.

For the patient's own use he is given the following prescription:

℞ Argenti iodidi, ... ℥i;
Muc. cydonii, ... ℥iij.

This is to be injected four times daily after urinating, and is to be retained for at least ten minutes. If properly prepared, it is nonirritating and may be used in the most sensitive urethra. It is also efficient as a germicide. The last injection of the day is taken at bedtime and the patient is instructed to hold it for thirty minutes. A clamp may be supplied for this purpose. Owing to the mucilaginous nature of the mixture, some of it will adhere to the urethral walls during the night to be washed out with the morning micturition.

In from three to seven days, depending upon the time the patient presented himself, the discharge will have greatly diminished or almost entirely ceased. To the suspension of silver iodide is now added fifteen grains of thymol iodide; a 1 in 4,000 solution of potassium permanganate is substituted for the previous irrigating fluid, the patient coming to the office once a day. Three days after the discharge has entirely ceased, the organic silver compound solution is omitted and the remainder of the treatment is continued until the urine is clear and free from shreds. It may be necessary in some instances to increase the strength of the potassium permanganate or to change to a solution of silver nitrate, 1 in 10,000.

I have not found it necessary to terminate the treatment with any astringent injections to clear up a so called postgonorrhœal catarrh. If in the beginning, there is ardor urinæ and the urine is highly colored, one of the alkaline diuretics as prescribed, of which the liquor potassii hydroxidi seems to be the most anodyne. For example:

℞ Fluid extract of kava kava, }
Tincture of hyoscyamus, .. } ..... āā ℥ss;
Solution of potassium hydroxide, ... ℥iii;
Syrup of cinnamon, ... q. s. ad ℥iij.

M. Sig. Teaspoonful in a glass of water every three hours.

No other internal treatment is given but the patient is forbidden asparagus, rhubarb, fruits, and the so called phosphates of the soda fountain, ginger ale, all condiments, alcoholic drinks, and sexual excitement of any kind. He is directed to drink freely of water and to keep the bowels open.

Whether infection of the posterior urethra takes place or not will depend upon the time in the disease that the patient presents himself for treatment and upon the laxness of the constrictor urethral muscle. If the patient is first seen after from the seventh to the tenth day, posterior infection will usually take place in spite of the most careful treatment. The urine is watched from day to day to determine this. It is arranged that the patient does not urinate for two hours before coming to the office. An anterior irrigation is then given after which he passes urine into two glasses; the second one is inspected for any cloudiness. If there are signs of posterior infection and the symptoms are so mild as to be scarcely noticeable by the patient, the treatment is continued the same as at the beginning of the acute stage except that the irrigation is given through to the bladder. The patient is also directed to force the hand injection past the cutoff muscle. This is easily accomplished if he will relax his perineal muscles and use steady, gentle pressure on the syringe.

If the symptoms of posterior trouble are severe, all local treatment is suspended, except that the hand injection should still be used for the anterior urethra in order that the infection in this portion

of the canal does not progress. Rest is enjoined, bicycle riding being especially prohibited. The anodyne prescription is given, and hot sitz baths ordered at night, followed by rectal suppositories of belladonna and opium. As soon as the acute symptoms subside, treatment is resumed as in the cases with slight symptoms. When the disease is well under control the silver compound injection is replaced by an instillation of a stronger one into the posterior urethra once daily. If the irrigation was of salt solution, it is changed to potassium permanganate, 1 in 5,000, two quarts, gradually increased to 1 in 3,000, and later to silver nitrate, 1 in 10,000 or 1 in 5,000. This is continued until the urine is clear and there are no gonococci in the centrifuged urine after massage of the prostate.

There seems to be no quick cure for chronic gonorrhœa. It calls for careful and prolonged treatment. Our purpose is to restore the urethra and its annexa to as nearly normal condition as possible. Its management requires much closer individualizing than the acute disease. Its routine treatment comprises a number of measures any one or more of which may not be adapted to the case in hand, and whose usefulness must be determined by trial. As to the method of procedure, I find it useful to make a distinction between those patients in whom the gonococcus is present in the urethra, and those in whom the gonococcus is not found on examination.

The patient is directed not to urinate for four, or at least three, hours before coming to the office. The prostate and vesicles are then massaged and any discharge which can be made to appear at the meatus is caught on a slide and examined for gonococci. If no discharge is made to appear, the patient urinates and the first ounce is caught and is centrifuged and examined for cocci. If no gonococci are found, the case is treated as though they were not present. While a negative finding does not exclude the positive presence of the gonococcus, the method is sufficiently exact to direct the proper course to pursue.

If the gonococcus is present, treatment will depend upon the activity of the symptoms. If these are exaggerated and the discharge considerable, I give the following for a hand injection, directing that it be gently forced into the posterior urethra:

℞ Argenti iodidi, ...3i;
Thymol. iodidi, ...grs. xx;
Muc. cydonii, ...℥iij.
M.

Daily irrigations of potassium permanganate, 1 in 4,000, gradually increasing, are given. The bladder is filled at least twice at each sitting. When the discharge has diminished and become less purulent the hand injection is changed to a solution of one of the organic silver compounds, no attempt being made to pass it beyond the cutoff muscle. If the discharge is small in amount at the start, treatment with one of the organic silver compounds is begun at once. With the gradual amelioration of symptoms other measures are instituted, such as the passage of cold sounds, prostatic massage, instillations, and dilation, in the order given. These measures are begun one at a time and tentatively; if after trying any one of them, the disease fails to improve after a reasonable length of time, or is aggravated thereby, it is discontinued, perhaps to be tried later.

Cold sterile sounds are first tried. They are introduced twice a week for their tonic and resorptive effect and allowed to remain for from twenty to thirty minutes. If erection occurs they are removed. A nonoily lubricant is used.

Massage of the prostate is one of the most valuable measures in chronic gonorrhœa. It is performed twice or three times a week, while the sound is *in situ* or after its removal, beginning with a few light strokes at the first trial, and if it is well tolerated, gradually increasing at each succeeding visit to a vigorous massage. The irrigation should follow the massage, or the sound when the latter alone is used. Sounds are gradually increased in size to the width of the meatus and then may or may not be succeeded by the Kollman dilator, according to conditions. The latter instrument does not replace sounds but is often very useful to stretch the posterior urethra and express the contents of the prostatic follicles. It is not necessary for it to remain in place more than five minutes.

Instillations are given with a Keyes instillator. Ten drops of a 1 in 200 or 1 in 100 solution of silver nitrate are deposited in the prostatic urethra twice a week, following the irrigation. When all of these means of treatment are in use, they are given in the following order: 1. Introduction of sound or dilator; 2, massage of prostate; 3, irrigation; 4, instillation.

Some cases of chronic gonorrhœa are peculiarly susceptible to overtreatment. I have found it necessary at times to suspend all treatment except irrigation and light massage two or three times a week.

When the discharge ceases I usually employ silver nitrate for irrigation instead of potassium permanganate. Sometimes picric acid solution, 1 in 1,000, seems to be more efficient than either one of these.

If, when the patient presents himself, no gonococci can be found, or when a patient with gonococci has been treated up to the point where they are no longer discovered by examination, the silver salts are omitted from the hand injection and an astringent such as zinc sulphate (two grains to the ounce) is given instead. Sounds, instillations, etc., are used as before, but particular care is taken to avoid overtreatment. Numerous shreds in the second glass call especially for massage. Exercise, moderate alcoholic, and sexual indulgence, and nutritious diet are often beneficial, though each individual must be carefully considered, especially as to alcohol and coitus. If a case is unusually stubborn, I examine with the urethroscope. If any small ulcers are found they are touched with a ten per cent. silver nitrate solution on an applicator.

An attempt is made by these various means to clear the urine of shreds. It may be necessary to suspend treatment at times and resume after a period of rest. A temporary change of climate is frequently of advantage in the catarrhal cases. In a few instances antigonococcic serum seems to have been of assistance in bringing about a cure in those cases in which the gonococcus is present.

Acute exacerbations of chronic gonorrhœa are handled much the same as the middle stage of the acute disease until the active symptoms subside, except that irrigations are given through to the bladder.

Vesiculitis and the various complications of gonorrhœa need not be considered here.

(*To be continued.*)

Correspondence.

LETTER FROM EDINBURGH

The Tuberculosis Conference.—The Exhibition.—Addresses in the Schools.—An Address by Professor Osler.—The Papers Read.

EDINBURGH, *July 11, 1910.*

The National Association for the Prevention of Consumption and Other Forms of Tuberculosis has just concluded its eleventh annual meeting and conference. This year Edinburgh was selected as its meeting place, and the gathering was a most successful one. The conference proper—that is to say, the meetings for the discussion by members of the various aspects of tuberculosis—lasted two days, July 4th and 5th; but the numerous functions and popular lectures in connection with the meeting extended over nine days, from the 1st to the 9th inclusive. Medical men from all parts of the kingdom were present, fine weather was the rule, and the visitors had a most enjoyable stay in Edinburgh.

The proceedings began with the opening by the Countess of Aberdeen of the Tuberculosis Exhibition in the New College Buildings. This is a permanent collection belonging to the association, and is intended to represent in a popular manner the features of tuberculosis. Models, photographs, and diagrams show graphically the evils of overcrowding; microscopical slides, wax models, and pathological specimens, accompanied by lucid printed descriptions, convey to the lay mind the nature of the tubercle bacillus and the havoc it plays in the human frame; while a large chart by Dr. Sims Woodhead shows the reduction in the death rate which has been going on during the last twenty years, and, continuing the argument on prophetic strain, shows how at the same rate phthisis may be extinct in 1940. A most interesting section of the exhibition is the Sanatorium Section, where the methods and appliances are explained by nurses. On this occasion the exhibition was further enriched by loan collections from Edinburgh and Cambridge, and Lady Aberdeen's interest in the work induced her to send over her Irish exhibit. The exhibition was largely attended by the public during the eight days it was on view. On several evenings a band played in the courtyard, furnishing an additional attraction to the public.

Prior to the opening of the exhibition by Lady Aberdeen, the annual meeting of the Royal Victoria Hospital for Consumption was held, and an opportunity thus given to the visitors of learning something of the working of one of the best managed hospitals of its kind in the kingdom. In the evening Professor E. J. McWeeney, of Dublin, lectured on Consumption: What it Is, and How it can be Prevented. He gave a popular account of the bacillus and its effects, and explained the work done by those connected with the consumption campaigns in Great Britain and Ireland.

Saturday morning was devoted to addresses on tuberculosis in the Edinburgh schools. Professor Sims Woodhead, Professor McWeeney, Dr. Squire, Dr. Latham, Dr. Charles Gray, and Dr. Jane Walker gave short popular accounts in different schools of the disease and its prevention. These meetings were well attended. In the afternoon the new Farm Colony at Springfield was formally opened by Lady Dunedin. The nature and objects of this Farm Colony were fully explained in my letter of March 30th, and need not be repeated here. The weather was superb, and the visitors had an opportunity of observing the new colony under most favorable conditions. After the formal opening, the proceedings took the form of a garden party. In the evening Dr. Halliday Sutherland, of Westmoreland Sanatorium, delivered the second of the series of popular lectures, his subject being The White Plague.

On Sunday afternoon a service for students and visitors was held in the McEwan Hall, and this large building was filled. The principal feature of the service was an address by Professor Osler on Man's Redemption of Man. The professor dealt with man's conquest of nature in a stirring and eloquent manner; he showed how science was to be looked to for bringing man within the gates of Paradise Regained. The new Socialism of Science, he said, had a definite mission to the individual; it cared not a rap for the theories of Karl Marx or of Henry George, except in so far as they helped to realize the well being of the citizen. The outlook for the world had never been so hopeful, and there was no cause for despondency or despair. After the address, Chopin's Funeral March was played on the organ as a tribute to the memory of the late Dr. Robert Koch, and short addresses on Koch's work were given.

The meetings proper of the conference began on Monday. At the morning session a discussion on The Avenues of Infection in Tuberculosis was opened by Professor Sims Woodhead. Professor Osler, president, occupied the chair, and there was a large attendance, Lady Aberdeen being among those present. The discussion was taken part in by Professor Adami, of Montreal; Professor McWeeney, of Dublin; Dr. Ritchie and Dr. Philip, of Edinburgh; Professor Bartels, of Vienna; and Professor Tendeloo, of Leyden. After a luncheon given by the Royal College of Physicians at their hall in Queen Street, the session was resumed, and a discussion on Preventive Measures and the Administrative Control of Tuberculosis was opened by Dr. Hermann M. Biggs, of New York. Dr. Biggs gave an interesting account of the manner in which the disease was combated in New York; he compared their measures with those of Edinburgh, and showed how the sanitary authorities took the initiative in his city, whereas here the work began with the dispensary. Dr. Leslie MacKenzie, medical member of the Local Government Board for Scotland, read a paper on The Administrative Control of Pulmonary Phthisis in Scotland. Dr. Stafford, of the Local Government Board for Ireland, and Dr. Hope, of Liverpool, joined in the discus-

sion, and the importance of notification was dwelt on by Dr. Maxwell Williamson, Medical Officer of Health for Edinburgh, and Dr. Scurfield, M. O. H. for Sheffield. Professor Adami, of Montreal, described the preventive work carried on in Canada, and Dr. Chalmers, M. O. H. for Glasgow, discussed The Economics of Phthisis.

In the evening the annual meeting of the association was held in the United Free Assembly Hall, when the annual report was presented. Lord Balfour of Burleigh, chairman of the Council, presided, and in moving the adoption of the report called attention to the work of the association, and referred to the death of King Edward, who had been patron. An address of condolence had been presented to King George V., who had been asked graciously to fill his late father's place by continuing the Royal patronage. Addresses were given by several of the visitors, and the desirability of compulsory notification was dwelt upon by most of the speakers. Later in the evening the members and their friends were entertained by the Lord Provost and Town Council at a reception in the Royal Scottish Museum.

On the second day of the conference much interesting matter was brought before the members. Dr. Theodore Williams, M. V. O., presided at the morning session, when a discussion on The Incidence of Tuberculosis in Childhood was opened by a paper from Dr. Hamburger, of Vienna, read (owing to absence of the author through illness) by Dr. R. W. Philip. Dr. Hamburger dealt with the question as it affected them in his own city. He was followed by Dr. J. E. Squire, C. B., of London, who discussed the merits of the tuberculin method of diagnosis and dwelt on the variations in incidence as demonstrated by clinical examination. Dr. Shennan spoke of the deaths in the Edinburgh Sick Children's Hospital; Dr. Dingwall Fordyce referred to the question of the milk supply; and Dr. Philip, Dr. Carnegie-Dickson, Dr. McNeil, Dr. Stanley (Birmingham), Dr. Woodcock (Leeds), and others also took part in the discussion.

Professor Osler presided at the afternoon session, which was devoted to a discussion on The Working Man in Relation to Tuberculosis, opened by Mr. Charles Garland, of London. Mr. Garland attacked the problem from a sociological point of view, and the discussion was continued by Sir D. C. McVail, Sir Thomas Oliver, Dr. Liston, Dr. Nathan Raw, and many others.

In the evening Professor Sims Woodhead gave a popular lecture, with lantern illustrations, on What the Tubercle Bacillus Does. The lecture was arranged to take place in the Rainy Hall, where the others had been given, but, as the hall was more than filled long before eight o'clock, it was decided to adjourn to the larger Assembly Hall adjoining. Professor Woodhead gave a popular account of the bacillus and explained the various forms of tuberculosis other than consumption.

On Wednesday evening Dr. Nathan Raw, of Liverpool, delivered a lecture on The Prevention and Cure of Consumption. This lecture was also delivered in the larger hall, and was illustrated by means of lantern slides. Dr. Raw endeavored to dispel some of the popular fallacies regarding the disease, showing that consumption was both preventable and curable, and advocated a system of insurance against it.

The same evening, Mr. C. H. Garland addressed a meeting of Post Office workers in the Goold Hall on Sanatorium Life at Benenden. Mr. Garland is chairman of the Benenden Institution, where the Post Office Sanatorium Society hold thirty-five beds.

On Thursday, Friday, and Saturday the only functions were the exhibition and the evening popular lectures. On Thursday evening Professor Gerald Leighton, of the Dick Veterinary College, lectured on Animal Tuberculosis and Human Infection, in which he showed the important facts bearing upon the infection of human beings from animals suffering from tuberculosis, and how that infection might be prevented. Friday evening was devoted to a lecture by Dr. Shennan, pathologist to the Edinburgh Royal Infirmary, whose subject was Natural Susceptibility and Natural Resistance. The lecturer dealt with the individual or personal factor in combating tuberculosis, and showed the importance of individual action as contrasted with government or municipal action. The concluding lecture was delivered on Saturday night, when Dr. Maxwell Williamson spoke on The Edinburgh Outlook on Tuberculosis. Dr. Williamson indicated what the Edinburgh municipality was doing in the way of preventing the spread of the disease.

During the week Mr. Stanley Bates gave lantern demonstrations on sanatorium treatment each afternoon at the exhibition. The attendances at all the lectures were good, some being given to very large audiences, and the nine days devoted to so important a subject has undoubtedly stimulated interest in the disease and in the campaign against it, not only among the medical profession, but among the general public, especially those classes to whom the campaign specially appeals and for whose benefit particularly it is being waged.

Therapeutical Notes.

The Treatment of Gastric Ulcer.—Louis (*Presse médicale,* 1909, p. 816) favors calcium carbonate in preference to bismuth subnitrate for the treatment of ulcer of the stomach. He prescribes the following:

℞ Calcium carbonate, ...3iiss;
Ferrous carbonate, ...gr. i;
Oil of anise, ...gtt. v.
M. In pulv. x æq. divid.
Sig.: One powder in half a glassful of water an hour before breakfast.

Quinine in Whooping Cough.—The *Prescriber* for June, 1910, cites an article by Berliner in the *Münchener medizinische Wochenschrift,* in which whooping cough is treated by the introduction into the nasal fossæ of an ointment of quinine sulphate and petrolatum. The strength of the ointment varies from 1 in 10 to 1 in 6, according to the age of the patient; it is introduced three times daily by means of a glass rod, the patient's head being well thrown back. Marked improvement, especially in younger patients, is noticed in a few days, the attacks being reduced in number and in intensity.

NEW YORK MEDICAL JOURNAL
INCORPORATING THE
Philadelphia Medical Journal
and The Medical News.

A Weekly Review of Medicine.

Edited by
FRANK P. FOSTER, M. D.

Address all business communications to

A. R. ELLIOTT PUBLISHING COMPANY,
Publishers.
66 West Broadway, New York.
Cable Address: Medjour, New York.

SUBSCRIPTION PRICE:

Under Domestic Postage Rates, $5; under Foreign Postage Rate, $7; single copies, fifteen cents.

Remittances should be made by New York Exchange or post office or express money order, payable to the A. R. Elliott Publishing Co., or by registered mail, as the publishers are not responsible for money sent by unregistered mail.

Entered at the Post Office at New York and admitted for transportation through the mail as second class matter.

NEW YORK, SATURDAY, JULY 30, 1910.

THE ANTIMICROBIAL.

A great deal of misconception still lingers in the minds of physicians concerning the use of disinfectants, and much rubbish is written about the value of antiseptic sprays and mouth washes, and especially about the virtues of "intestinal antiseptics." The unthinking appear to lose sight of the fact that infection is something more, in fact a great deal more, than the growth of bacteria in a suitable medium. If the matter is carefully investigated, it will probably be found that many of the successful applications of disinfectants and antiseptics have absolutely nothing to do with a germicidal action. For example, it is extremely doubtful whether the virtue of mercury bichloride wet dressings in cellulocutaneous streptococcus infections is not merely that of the wet dressing as such, the mercuric chloride merely keeping the dressing "sweet." In like manner, too, the good results seen in arresting the spread of such infections by painting the margin with tincture of iodine are very probably due to an increased emigration of leucocytes at that part and in no way dependent on a germicidal effect of the iodine. Aseptic surgery has certainly taught us that gauze and cotton dressings over a wound keep out infection mechanically, just as the cotton plug keeps bacterial cultures from being contaminated. Sterile drying powders are also used to prevent infections, *e. g.*, the use of starch as a dressing for the umbilical cord in the newly born. While truly an antipathogenic agent, its effect is purely mechanical, causing the drying of the part and the consequent production of unsuitable conditions for bacterial growth. In the use of germicidal spray solutions in affections of the nose and throat many of the manufacturers would have us believe that the germicidal action of the solution on cultures of pathogenic bacteria indicates exactly the clinical value of the preparation. What value they have is probably mainly mechanical, and consists in a direct washing away of dried secretions or in stimulation of freer secretion.

In making use of germicides it is well to bear in mind that the action of these substances is quantitative, that is to say, in order to effect the destruction of microorganisms a certain concentration of the destructive agent is necessary, and the agent must be allowed to act for a certain time. This concentration and the length of exposure are usually such that the bodily tissue would also be destroyed if the agent were thus employed. As a matter of fact complete destruction of the pathogenic germs is probably never necessary, the natural defensive agencies of the body sufficing to dispose of microorganisms which have been weakened by the germicides. In the case of a few microbial diseases we already know of germicidal substances which kill organisms that have invaded the body. Thus quinine acts in malarial disease, mercury in syphilis, and atoxyl in trypanosomiasis. It will be noted that not one of these is a bacterial infection. There appears to be no reason, however, why similar conditions may not exist in the case of the latter class of infections. The vast benefits to be derived from germicides of this kind should stimulate research along the lines recently begun by Ehrlich in his studies on specific therapeutics.

It will be observed that we have avoided the use of the term "antiseptic." This term dates from the time when our ideas concerning the infectious diseases were still quite vague, and when infections were regarded as kinds of putrefaction. At the present time the term antiseptic is used loosely to denote a substance having the power to injure or to inhibit the growth of bacteria. Obviously substances exist which have a similar effect on protozoa, on yeasts, etc. Unless we wish to extend the use of the term by metonymy to these substances also, it would be better to use the term antimicrobial. After all, microbe is an extremely useful term and one which we can ill spare; therefore, why not antimicrobial?

THE BOHEMIAN PYGOPAGUS TWINS.

On January 20, 1878, there were born in Skreychov, Bohemia, the united twins Rosa and Josepha Blazek. The mother, a secundipara of twenty-two years, who had, two years previously, given birth to

a healthy, well developed girl, was delivered of the twins by a midwife without any difficulty. Six months later, Dr. August Breisky, professor of gynæcology in the German University of Prague, visited the twins and found them well developed. They were joined in the gluteal region. They had a common anus and a common vulva, but the two trunks, the organs of the pelvis, and the lower extremities were separate. In 1891 the twins were exhibited in Paris. Mr. Marcel Baudouin gave at that time a good description of the girls, then thirteen years of age, in the *Semaine médicale* for July 8, 1891.

Their trunks were not parallel, as the spinal columns formed the letter V, each leaning to the opposite side at about 45°; each head was somewhat inclined to the inner side. The union of the two trunks took place posteriorly by the sacrum, which was common to both girls, and by separate iliac bones. The sisters were accustomed to lie on one side, Rosa on the left and Josepha on the right. When thus examined, only superficially, the twins seemed to possess only one urethra, one vulva, and one anus. There was, indeed, only one urethral orifice from which the urine could be seen to flow out. A sound was not introduced, but they must have had two different bladders, as their desire to urinate did not appear at the same time. Immediately in front of the urethra, in the median line anteroposteriorly, was a well developed single clitoris, from which, on each side, toward the back could be seen rudimentary labia minora, while the whole was protected by a large, nearly oval "collerette" representing two labia majora, which thus formed a single vulva. But into this vulva, and this is important, discharged two vaginæ joined together like the barrels of a double barreled gun, entirely separated by a complete partition, and each possessing a hymen running crosswise. Between the vulva and anus was a slender but well developed perinæum. The rectum must have been common up to a certain distance, as the desire to defæcate was simultaneous, but, without question, there existed two large intestines. The twins possessed two entirely different characters, and lived independently of each other, as far as such a condition was possible; that is, while one might be asleep the other might be awake. They did not have the same tastes; one liked beer, the other wine; one was fond of salads, the other detested them; the heart beat differently and the radial pulses were not synchronous, etc. But this physiological examination was difficult, as the girls spoke only Czech, and Dr. Baudouin had to depend upon the translations of the manager.

So far Marcel Baudouin's report, published in 1891. The twins did not figure again in the medical journals, and many a reader of the description may have forgotten their existence, although they seem to have been exhibited to the public all the time, until there appeared in the same French paper, the *Semaine médicale* for May 18, 1910, nineteen years later, the report that one of the twins, Rosa, had given birth to a healthy boy. Dr. C. Trunecek, of Prague, makes this statement in the French journal, while Dr. Basch, of Prague, reports the case in the *Deutsche medizinische Wochenschrift*. It seems that the sisters had retired to Prague and were living an uneventful life. Rosa became troubled with an abdominal swelling, and on April 15, 1910, they went to the surgical department of the General Hospital for advice. An examination followed, and when pregnancy was suggested the answers were "catégoriquement négatives." Dr. Pitha, professor of gynæcology in the Bohemian University, was asked to make an examination, but before he could do so Rosa was, on April 17th, delivered of a healthy boy by a midwife. The father of the infant seems to have been the manager of the twins. We shall give here a condensed review of Dr. Trunecek's report:

When Professor Pitha examined the twins, on April 29th, the twelfth day after the delivery, he found that the twins were united posteriorly by the sacrum and the iliac bones. Only a few accurate measurements could be taken. The mammary glands were developed in both, and all four breasts secreted milk. The abdominal wall of Rosa was distended and showed lineæ albicantes, while this was not the case in Josepha. Usually the twins were lying on one side, Rosa on the left, Josepha on the right. In this position, when the legs were flexed upon the thighs and the thighs upon the pelvis, the view of the genital organs and anus was very good. The urethra was common only for a distance of three centimetres, when it divided into two channels, each with a separate sphincter, leading to two bladders. The rectum bifurcated about five centimetres above the anus. The entrance to Josepha's vagina was much narrower than Rosa's, on account of the accouchement. In Rosa the entrance to the vagina and the vagina itself were much dilated. Both vaginæ were well developed but short. The septum separating them was much torn, and Josepha had suffered lacerations of the posterior wall of the vagina. The rugæ in Josepha's vagina were well marked, but nearly obliterated in Rosa's organ. Rosa's uterus was as large as one's fist, discharging bloody lochia, while Josepha's uterus was small, anteflexed, and of normal size. Rosa used her right foot in walking, the left leg being shorter, while Josepha used the left foot, the great toe of the right foot only touching the ground.

THE EFFECT OF MEASLES ON PSORIASIS.

The occasional curative action of erysipelas on certain chronic affections is well known. We are not aware, however, that the same can be said of measles. Dr. Rubens (*Deutsche medizinische Wochenschrift,* January 20th; *Semaine médicale,* July 13th) records the following occurrence: A man, twenty-eight years of age, had had for fourteen years a generalized psoriasis vulgaris that had proved rebellious to all the usual modes of treatment. One day he was seized with fever, and Rubens made the diagnosis of measles, although the rash, masked as it was by the patches of psoriasis, was not very clear. However, his diagnosis was soon confirmed by the fact that, a week later, the man's two children came down with measles of a perfectly typical character. On the third day of the exanthem in the man the author was not a little astonished to see an excessively abundant desquamation followed immediately by the complete disappearance of the psoriatic patches, leaving only a slight redness of the skin. The hairy scalp itself, which had been very severely affected with psoriasis, became altogether free from that disease.

In view of the obscure ætiology of psoriasis, Rubens finds it difficult to explain his case. It is possible, he remarks, that the hyperæmia provoked by the measles exerted a curative action analogous to that of prolonged hot sulphur baths, but he also asks if we may not look upon the case in question as bearing out Lassar's hypothesis that psoriasis is an infectious disease, and infer that the stronger virus destroyed the weaker one. Psoriasis is not an uncommon affection, and attacks of measles occurring in adults are by no means infrequent, so that we ought, one would think, to have more opportunities of observing the effect of the acute exanthem on the chronic disease or the absence of any effect, as the case may be.

COUNTER PRESCRIBING AND OFFICE DISPENSING.

These are two practices which the profession of medicine and that of pharmacy ought to cooperate to restrict. We say restrict, for it is probable that they can never be wholly abolished; indeed, neither the one nor the other is under all circumstances an evil. The pharmacists seem to be making a most commendable move toward bringing about in the two professions such unity of feeling as, it may be hoped, will lead to the suppression of reckless prescribing by apothecaries and unnecessary dispensing by physicians. According to the *American Druggist and Pharmaceutical Record* for July 25th, the following preambles and resolutions have been prepared for the consideration of the National Association of Retail Druggists at its meeting in Pittsburgh in September:—

WHEREAS, Medicine and pharmacy are two distinct professions, requiring several years of preparation, in most instances a college course of from two to three years, and in all cases a State board examination, before a practitioner is allowed to enter upon his important duties as a full fledged licentiate; and

WHEREAS, The two professions have entered upon an era of reform in "getting back to first principles" in medicine and pharmacy and in establishing closer relations in the interests of the physician, pharmacist, and patient, the basis of which is mutual concession and good will; therefore be it

Resolved, That the laws on our statute books which prohibit under penalties the diagnosticating and prescribing for the sick by pharmacists hereby receive our fullest commendation and the reasonable and proper enforcement of them our unqualified support.

Resolved, That this association is also opposed to the compounding and dispensing of medicines by physicians and favors such modification of our laws as will prohibit the same under suitable penalties.

Resolved, That in either case neither the provisions of the laws nor the enforcement thereof should be such as to prevent the prescribing by pharmacists for those minor ailments for which the public cannot be induced to consult a physician, or to permit the dispensing of his own medicines by the physician during a visit to a patient when the nearest pharmacy is not in reasonable proximity to the sick room.

Resolved, That it is the sense of this convention that the State boards of health and pharmacy should cooperate in the enforcement of the medical practice act and pharmacy law to the extent that the rights and privileges of each profession are preserved and the interests of the public safeguarded.

The conservative and conciliatory spirit here shown is in gratifying contrast to the drastic recommendations recently brought by certain New York pharmacists before the New York State Pharmaceutical Association, the point of which was that a coroner's inquest should be required in every case of death in which the deceased had been supplied with medicines by the attending physician. It seems that the association adopted certain resolutions in which this bellicose recommendation was included, but our contemporary doubts if it will be moved to do much if anything in the matter, and it adds: "The medical profession of the country would rise as one man to resent any move to call the coroner in when one of their patients died, and public sentiment would also be against it."

UNCONTROLLED LIGAMENTS.

Among recent examples of newspaper medicine is a Hartford dispatch published last Saturday by the *New York Tribune.* It announces a great prevalence of infantile paralysis in the valley of the Con-

necticut River, and closes with this Delphic utterance: "Limbs become permanently paralyzed because of the destruction of clusters of nerve cells which control the ligaments."

A CHANCE FOR ROYAL EUGENICS.

Some interest has of late been shown in the alleged fact that several of the male sovereigns of Europe are defective in stature, even to the degree that their royal spouses tower above them. Naturally this state of things is hard for certain good souls to bear, and probably eugenics will be called into play to remedy it; but it should not be overdone, for men who are much above the average height are not always looked upon as good risks by the life insurance companies.

News Items.

A Tuberculosis Sanatorium in Cleveland.—On July 22d Cleveland voted to issue $250,000 worth of bonds for the establishment of a sanatorium for tuberculosis.

A New Source of Radium Supply has been discovered in Turkestan. Uranium ore containing radium has already been found there in considerable quantities, according to press despatches.

The Warren Prize for 1910 has been awarded to Dr. George H. Whipple, associate professor of pathology at Johns Hopkins University, for his essay on the Pathogenesis of Icterus. This prize, which is awarded every three years, amounts to $500.

The Surgical Society of Chicago met in annual session recently and elected the following officers for the ensuing year: President, Dr. Jacob Frank; vice-president, Dr. Charles Davison; secretary, Dr. Frederic A. Besley; treasurer, Dr. Dean De Witt Lewis.

The Torrington, Conn., Medical Society met in annual session recently and elected the following officers for the ensuing year: President, Dr. Thomas L. Thomson; vice-president, Dr. Abram J. Barker; secretary, Dr. D. P. Platt; treasurer, Dr. George Streit.

New Physicians in Pennsylvania.—Three hundred and six candidates passed the recent examination of the Pennsylvania State Medical Board, and have been granted licenses to practice medicine in the State. Among them were fourteen women. Three hundred and forty-five took the examination, and thirty-nine failed.

The Philadelphia General Hospital.—Dr. Edward A. Leonard has been promoted to the position of assistant physician in the hospital, made vacant by the resignation of Dr. Samuel Stern. The director of the Department of Public Health and Charities also announces that Dr. Joseph Dunn has been appointed an assistant physician at the same hospital.

Amputation by Electricity.—According to press despatches, Professor J. A. d'Arsonval, of the College of France, suggests a novel method of amputation by means of electric currents of high frequency. Experiments on animals prove the possibility of raising the temperature to a very high degree by means of currents, apparently without pain. After some days the members so treated fall away, leaving the stumps perfectly cicatrized.

Changes in the Medical Faculty of Tulane University.—Dr. H. W. Stiles, associate professor of anatomy, has resigned to accept the chair of anatomy in the University of Syracuse, N. Y., and his place will be filled by Dr. R. B. Bean, formerly associate professor of anatomy in the Philippine Medical School, Manila. Others who have resigned from the faculty are Dr. M. S. Souchon, demonstrator of anatomy, and Dr. J. Frank Points, assistant demonstrator of anatomy.

Epileptic Hospital Officers.—At a recent meeting of the board of managers of the Pennsylvania Epileptic Hospital and Colony Farm, Dr. Samuel W. Morton, of Philadelphia, was elected president, to succeed the late Dr. Wharton Sinkler, and Dr. Francis W. Sinkler was elected secretary. The other officers are: Mr. Charles M. Lea, vice-president, and the Fidelity Trust Company, treasurer. This hospital is situated at Oakburne, Chester County, but is supported largely by Philadelphians.

An X Ray Apparatus for Flushing Hospital.—Mr. Thomas E. Hardgrove, of Elmhurst, L. I., who has long been a friend to the Flushing Hospital, recently announced to the board of directors that he had started a subscription in order to raise funds to purchase an x ray apparatus for the hospital. Last spring Mr. Hardgrove was a patient at the Flushing Hospital, when it was found necessary to give him x ray treatment, and as the hospital was not equipped for this work, he was transferred to Roosevelt Hospital, New York, for treatment. Mr. Hardgrove will have the enthusiastic support of the directors in the matter.

A Report on Poliomyelitis and Polioencephalitis.—The secretary of the Buffalo Academy of Medicine has sent to each member of the academy a special request to report all cases of poliomyelitis and polioencephalitis to Dr. Irving Snow, or Dr. L. Kaufman, who will furnish blanks for the preservation of data, and will also assist in determining a diagnosis wherever desired. The members of the academy are also requested to urge other physicians who are not members to do the same thing, in order that the collected data may be as complete as possible. A report on the subject will be submitted at the November meeting of the Section in Medicine.

Changes in the Faculty of Johns Hopkins University.—Among the changes which have been made in the faculty of Johns Hopkins University are the following promotions: Donald R. Hooker, M. D., associate professor of physiology; Carl Voegtlin, Ph. D., associate professor of pharmacology; George H. Whipple, M. D., associate professor of pathology; Eliot R. Clark, M. D., associate in anatomy; Herbert M. Evans, M. D., associate in anatomy; John H. King, M. D., associate in pathology; Arthur H. Koelker, Ph. D., associate in physiological chemistry; Milton C. Winternitz, M. D., associate in pathology; Charles R. Essick, M. D., instructor in anatomy; Thomas P. Sprunt, M. D., instructor in pathology.

The Iowa State University College of Medicine Not to Be Closed.—Dr. James H. Trewin, president of the Iowa State Board of Education, and Dr. James R. Guthrie, dean of the College of Medicine of the Iowa State University, have issued a statement denying the report that this college is to be closed. Recently many reports have been circulated that this college did not come up to the required standard and would be abandoned, and so persistently have these reports been circulated that President Trewin and Dean Guthrie have seen fit to issue a public statement, not only denying the truth of these reports, but setting forth in detail their plans for advancing the best interests of the college and making it one of the leading medical colleges in the United States.

Personal.—The Royal College of Physicians of Edinburgh has awarded the Cullen Victoria Jubilee Prize to Dr. R. W. Philip, of Edinburgh, for his work on tuberculosis.

Mr. C. W. Edmunds, professor of therapeutics in the University of Michigan, is spending the summer in Washington, D. C., where he is engaged in doing special research work in pharmacology at the Hygienic Laboratory of the Public Health and Marine Hospital Service.

Mr. William I. Spiegelberg, president of the Sydenham Hospital, and chairman of the ambulance committee of New York city, has gone abroad at the request of Police Commissioner Baker, for the purpose of making a thorough study of public and private hospitals, giving particular attention to the ambulance service in the more important cities of Germany, England, Switzerland, and France He is expected to return early in October.

It is reported in the daily newspapers that Mohammed Mi, who was deposed from the throne of Persia in 1909, has taken up the study of medicine. After private preparatory work, he expects to attend clinics and lectures at the University of Odessa. He is particularly interested in surgery.

Vital Statistics of Richmond, Va.—During the month of June, 1910, there were 264 deaths from all causes reported in the old city of Richmond, 131 white and 133 colored, corresponding to an annual death rate in a thousand of population of 21.47 for the white population, 37.55 of the colored population, and 2.38 for the total white and colored. The deaths of children under one year of age numbered 93; between one and five years of age, 14. One hundred and ninety-six births were reported during the month; 118 white and 78 colored.

The Health of Chicago.—During the week ending July 16, 1910, the following deaths from transmissible diseases were reported to the Department of Health of Chicago: Typhoid fever, 4 deaths; measles, 7 deaths; whooping cough, 3 deaths; scarlet fever, 2 deaths; diphtheria, 18 deaths; tuberculosis, 88 deaths; pneumonia, 60 deaths. The deaths under two years of age from diarrhœal diseases numbered 136. There was one death from cerebrospinal fever, 8 deaths from sunstroke, and 34 deaths from congenital defects and accidents. The total deaths from all causes, exclusive of stillbirths, numbered 644, corresponding to an annual death rate of 14.8 in a thousand of population, as compared with a death rate of 13.3 for the preceding week, and 11.3 for the corresponding week in 1909.

Vital Statistics of New York.—During the week ending July 16, 1910, the deaths from all causes reported to the Department of Health of the City of New York numbered 1,705, corresponding to an annual death rate of 18.88 in a thousand of population, as compared with a rate of 15.97 for the corresponding week in 1909. The annual death rate for the week in each of the five boroughs was as follows: Manhattan, 17.48; the Bronx, 18.47; Brooklyn, 20.29; Queens, 22.04; Richmond, 25.00. There were 126 stillbirths. The deaths of children under five years of age numbered 786; 568 under one year of age, 141 between one and two years of age, and 77 between two and five years of age. The deaths from diarrhœal diseases under five years of age numbered 437; over five years of age, 455. There were 45 deaths from sunstroke, 20 from suicide, 7 from homicide, and 91 due to accidents. Two thousand five hundred and seventy-nine births and 959 marriages were reported during the week.

The New Jersey State Pædiatric Society.—The first annual meeting of this society was held at Atlantic City, N. J., on June 27th, under the presidency of Dr. Henry L. Coit, of Newark. There was a large attendance not only of members but of other physicians interested in the work of the society. There were three sessions, the morning session being devoted to the transaction of routine business. The afternoon and evening sessions were devoted to the reading and discussion of scientific papers, including the president's address on Factors in the Conservation of Child Life. At the close of the evening session a reception was held by Dr. Coit and Mrs. Coit, for the visiting members and their friends. The officers of the society are: President, Dr. H. L. Coit, of Newark; vice-president, Dr. Alexander McAlister, of Camden; treasurer, Dr. B. Van D. Hedges, of Plainfield; secretary, Dr. M. J. Synnott, of Montclair; council, Dr. J. Finley Bell, of Englewood; Dr. Thomas N. Gray, of East Orange; Dr. Burdette P. Craig, of Jersey City; Dr. Emery Marvel, of Atlantic City, and Dr. F. H. Glazebrook, of Morristown.

Health Department of Buffalo Reorganized.—Dr. Francis E. Fronczak, Health Commissioner of Buffalo, has subjected his department to a complete reorganization, which, he believes, will improve public health work in the municipality. The Buffalo Department of Health is now organized as follows: (1) Bureau of Vital Statistics, including also the divisions of placarding, tuberculosis inspection, and city physicians. (2) Bureau of Child Hygiene, including the divisions of medical school examination, school nurses, child labor, and midwives. (3) Bureau of Plumbing and Drainage. (4) Bureau of Sanitation and Tenements, including the divisions of sanitation, tenements, public bath houses, scavenger, and police officers. (5) Bureau of Food and Drugs, including the divisions of food inspection, cattle inspection, milk inspection. (6) Bureau of Chemistry. (7) Bureau of Bacteriology, including the laboratory and the division of fumigation. (8) Bureau of Municipal Hospitals, including the smallpox hospital and contagious disease hospital. (9) Bureau of Publicity for the purpose of giving instruction and lectures on various matters relating to sanitation, feeding, etc.

The Mortality of New Orleans.—During the month of June, 1910, there were reported to the Board of Health of the City of New Orleans 580 deaths from all causes, 318 white and 262 colored. The annual death rate in a thousand of population was 14.03 for the white population, 31.12 for the colored, and 18.65 for the total white and colored. The deaths of children under five years of age numbered 162, 95 white and 67 colored; 112 under one year of age, 63 white and 49 colored; 30 between one and two years of age, 20 white and 10 colored; 20 between two and five years of age, 12 white and 8 colored. There were 48 stillbirths, 26 white and 22 colored.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Department of Health for the following statement of new cases and deaths reported for the two weeks ending July 23, 1910:

	July 16th		July 23d	
	Cases.	Deaths.	Cases.	Deaths.
Tuberculosis pulmonalis	542	181	614	154
Diphtheria and croup	298	24	277	25
Measles	344	21	275	11
Scarlet fever	149	10	133	9
Smallpox	..	..	..	..
Varicella	19	..	17	..
Typhoid fever	45	15	59	6
Whooping cough	20	8	34	6
Cerebrospinal meningitis	3	7	3	4
Total	1,420	266	1,412	215..

The American Association of Obstetricians and Gynæcologists.—The twenty-third annual meeting of this association will be held in Syracuse, N. Y., on Tuesday, Wednesday, and Thursday, September 20th, 21st, and 22d, under the presidency of Dr. Aaron B. Miller, of Syracuse. The headquarters of the association will be at the Hotel Onondaga. A preliminary programme has been issued which contains a list of the papers which have already been promised, together with general information regarding the place of meeting, the entertainments, etc. Forty-one papers are included in this programme, and the list of authors embraces the names of men well known in the field of obstetrics and gynæcology. About September 1st a complete programme will be issued, in which the papers will be properly arranged and classified, after which date no changes will be made in the programme. The Committee of Arrangements consists of the following members: Dr. Albert E. Larkin, chairman, 509 East Genesee Street, Dr. George B. Broad, Dr. Frederick Flaherty, and Dr. A. S. Hotaling. The chairman should be addressed concerning local details, hotel accommodations, etc. The officers of the associaton are: President, Dr. A. B. Miller, of Syracuse; first vice-president, Dr. Charles N. Smith, of Toledo, Ohio; second vice-president, Dr. Raleigh R. Huggins, of Pittsburgh, Pa.; secretary, Dr. William Warren Potter, of Buffalo; treasurer, Dr. X. O. Werder, of Pittsburgh, Pa.

New Building for the New York Polyclinic.—Plans have been filed for the erection of an eleven story, basement, and sub-basement building, to be erected on the north side of Fiftieth Street, sixty feet east of Ninth Avenue, for the New York Polyclinic Hospital and School. The building will have a frontage of ninety-five feet and a depth of ninety-six feet, with a façade of brick and granite, and will be built so as to permit the addition of three stories when necessity requires. Across the front of the building over the first story will be carved this inscription: "For the Sick Without Regard to Race or Creed." Laundry, drug, and store rooms will be in the basement; the first floor will contain rooms for the visiting staff, superintendent, visitors, students, patients, and trustees. On the second floor will be the medical amphitheatre, four wards, examination rooms, x ray room, and skin laboratory. The third floor will be given over to the surgical amphitheatre, minor surgical operating room, four wards, and a number of recovery rooms. The mezzanine floor will contain rooms for the treatment of the ear, nose, throat, and eye; the children's ward, maternity ward, and museum will occupy the fourth floor; from the sixth to the eighth floor inclusive there will be private rooms. On the fifth floor there will be rooms for nurses and servants' dormitories; the ninth floor will have private operating rooms and wards; the tenth floor will be given over to isolation wards, nurses', officers', and servants' dining rooms; the eleventh floor will be a solarium for private patients, ward patients, and for the children. The estimated cost of the building is $500,000.

Gifts and Bequests to Charity.—The will of Mrs. Julia M. Champlin, of Brookline, Mass., provides for bequests to charitable institutions totaling $75,000, bequests to charity provisional on the termination of life estates to the amount of $75,000 more, and the eventual distribution of the residue of an estate estimated to be worth more than $250,000 among charitable institutions and organizations. The beneficiaries are numerous Episcopal societies and charitable organizations in Boston and Brookline.

Many bequests to charity are included in the will of Adolph Leberman, who died recently in Atlantic City, N. J., leaving an estate of $41,000. Among the bequests made to Philadelphia institutions are the following: Jewish Seaside Home, $200; Children's Homœopathic Hospital, $100; St. Christopher's Hospital for Children, $100; Mt. Sinai Hospital, $100; Jewish Hospital Association, $150; Home for Incurables, $250; Jewish Foster Home and Orphan Asylum, $350, and United Hebrew Charities, $250.

Beriberi in the United States.—According to reports published by the Public Health and Marine Hospital Service, sporadic cases and outbreaks of beriberi have occurred in several States. In 1890 several cases of what was possibly beriberi were reported among New England fishermen, and the same report contained reference to other cases of what seemed to be the disease antedating these by ten years. Seventy-one cases were reported among the patients in the State Insane Hospital at Tuscaloosa, Ala., during the years 1895 and 1896, of which 21 were fatal. Sixty-four of the cases were among white patients and 7 among negroes. A somewhat similar outbreak was reported to have occurred in 1895 at the Arkansas State Insane Hospital at Little Rock. The superintendent of the Texas State Lunatic Asylum at Austin, in his annual report for the year ending August 31, 1907, stated that in the early part of July an epidemic of beriberi developed in that institution and that there were over 200 cases with 20 deaths. It was also stated that since 1891 there had been each year a limited number of cases of the disease, but that it had never assumed an epidemic form until 1907. In the monthly bulletin of the California State Board of Health for December, 1909, there was published a list of 25 deaths from beriberi reported in California during the years 1907, 1908, and 1909. Of these, 22 were Japanese, 2 Chinese, and 1 German. An outbreak of beriberi among convicts in South Carolina was reported on April 8th in the Public Health Reports. There were at least 17 cases and several deaths. The diagnosis was confirmed by an officer who had had experience with the disease in the Philippine Islands. The local physicians stated that similar cases had occurred not infrequently in past years.

The Fifth International Congress on Medical Electrology and Radiology will be held in Barcelona, Spain, from September 13th to 18th, under the patronage of King Alphonso XIII. All the sessions will be held in the amphitheatre of the Faculty of Medicine. The local committee of organization has spared no effort to make this congress the best in the history of the organization, and they have had the enthusiastic support of the medical profession and also of the government. The Spanish railway companies have arranged for a reduction in railway fares to all members of the congress, and a number of excursions into various parts of the country are being arranged. An interesting feature of the congress will be an exhibition of scientific material and apparatus showing the progress which has been made in the field of medical electrology and radiology. Among the topics selected for discussion are the following: Unification of the methods of electrodiagnosis: measures of radiology; electricity as an antiphlogistic agent; the biological action of electric currents of high frequency; the therapeutic value of the electrolytic introduction of medicinal ions, compared with the therapeutic action of uninterrupted current; the employment of x rays in the examination of the abdominal segment; action of autoconduction on the circulation of the blood. Dr. L. Cirera Salse is president of the Executive Committee; Dr. V. Carulla Margenat is vice-president, Dr. C. Comas Llaberia is general secretary, and Dr. F. de P. Xercavins is treasurer. Dr. Carl Beck is the New York representative on the International Commission. Among the communications already received is one from Dr. Charles Lester Leonard, of Philadelphia, entitled Progress Made in the Science of Röntgen Diagnosis.

Pith of Current Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL.

July 14, 1910.

1. The Occurrence of Infantile Paralysis in Massachusetts in 1909. Reported for the Massachusetts State Board of Health, By Robert W. Lovett.
2. Bilious Attacks in Children, By Philip S. Potter.
3. The Ætiology of Common Colds, By A. Coolidge.

1. Infantile Paralysis in Massachusetts.—Lovett gives a very interesting report on the recent progress of our knowledge with regard to infantile paralysis, and on the data obtained in reference to the disease in the State of Massachusetts in 1909. The most important step in our knowledge of the disease, says the author, is the establishment during the past year of its infectious character by several observers. With the ability to produce the disease in monkeys by inoculation, there has been given the opportunity to study its ætiology, symptoms, and pathology, which opportunity did not exist before. The stage of incubation in monkeys is from six to upward of thirty days, and the long incubation period in monkeys suggests the possibility that in the human being some of the late fall and early winter cases may have acquired their infection when the disease was prevalent in August and September. The ordinary incubation period in human beings is not known. It is generally stated as from one to fourteen days. One attack of the disease apparently confers immunity to future attacks. This is the accepted clinical history in human beings, and has been found to be the case in monkeys inoculated experimentally. It is generally believed that the disease is becoming more common and more widespread of late years, but one must bear in mind that there is a possibility that this is because the disease is better known and more frequently recognized. The author speaks of the diagnosis, and of distribution of outbreaks; he finds that outbreaks have very greatly increased in several parts of the world in the last five years in a measure not to be explained in any way by the increased interest in the disease. It is more prevalent in cold than in warm countries. From the northern part of the United States have been reported more cases than from any part of the world. The study of seventy outbreaks, reaching over a period of thirty years, has led to the knowledge of certain facts with regard to the disease, but they have not given us the essential facts as to how the disease enters the body nor how to prevent or check its spread. The relation of infantile paralysis is gone into and finally the transmissibility.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

July 23, 1910.

1. The Status of Vaccine Therapy in Ophthalmology, By John E. Weeks.
2. The Surgical Treatment of Separation of the Retina. By Casey M. Wood.
3. Alcohol and Nephritis. A Clinical Study of 460 Cases of Chronic Alcoholism, By J. F. Hultgen.
4. The Influence of Magnesium Sulphate on the Motor Cells of the Cerebral Cortex, By H. F. Hyndman.
5. The Relation of the Bloodvessel Walls to the Coagulation of the Blood, By Bertram M. Bernheim.
6. Pharmacological Fetishisms. A Second Contribution, By Wilfred M. Barton.

7. Cataract in Capsule Extraction by a New Means and New Method, By G. C. Savage.
8. My Experience in the Operation for Cataract, By J. L. Thompson.
9. One of the Functions of the Duodenum, By S. A. Matthews.
10. Manual Work in the Treatment of Nervous Diseases, By Herbert J. Hall.
11. Gymnastics and Massage in the Treatment of Nervous Diseases, By Haldor Sueve.
12. Nervous and Mental Disturbances of the Male Climacteric, By Archibald Church.
13. The Prevention of Blindness, By F. Park Lewis.
14. Fallacies in the Understanding of Antiseptics and Germicides with Special Reference to Mercuric Chloride, By Marsh Pitzman.
15. Further Investigations Regarding the Ætiology of Tabardillo, Mexican Typhus Fever, By H. T. Ricketts and Russell M. Wilder.
16. The Value of Combinations of Narcotics and Antipyretics, By A. Herzfeld.
17. A Study in the Prevention of Adhesions, By J. R. Claypool, B. M. Vance, P. R. Robertson, and Cyrus W. Field.
18. Pneumatic Illuminated Infantile Sigmoidoscope. A New Rectal Instrument, By W. H. Axtell.

3. Alcohol and Nephritis.—Hultgen remarks that alcohol when taken daily, as it is by chronic inebriates, dipsomaniacs, or drinkers, is not an irritant to the kidneys. When nephritis occurs in a chronic alcoholic, it is probably due to some other concomitant toxic agent, and not to alcohol. Overeating, acute intoxicants, exposure to colds, autointoxications, infections either manifest or latent, and some metabolic disorders as yet unknown, are the real causative factors of nephritis. Alcohol when taken by drinkers as food or stimulant, such as we see in chronic alcoholism, is a diuretic. Those tissues which eliminate alcohol are least affected by it. This applies to the lungs and especially to the kidneys. Alcohol, while an intoxicant, is also a detoxicant, ridding the body of various deleterious catabolic products. The comparative integrity of the kidneys in alcoholics may be due to the fact that the renal cells contain very few lipoids and lecithins, and that therefore they are not at all acted on by the narcotic molecule.

6. Pharmacological Fetishism.—Barton condemns the use of lead and opium wash in sprains; of aconite, internally, in neuralgia; of sparteine as a cardiac tonic and substitute for digitalis; of nitrohydrochloric acid in diseases of the liver and jaundice; of physiological salt solutions as a heart stimulant; of nitroglycerin and amyl nitrite as heart stimulants in anæsthetic accidents and shock; of calomel as a cholagogue; of ammonium chloride as an expectorant; of sweet spirit of nitre as a diuretic and diaphoretic; of pepsin pancreatin diastase; of ergot as an internal hæmostatic; of oil of turpentine as an antidote in phosphorus poisoning; of hydrated oxide of iron and magnesia in arsenic poisoning; of sodium sulphate in phenol poisoning.

9. A Duodenal Function.—Matthews, from experiments, observations, and operations, thinks that the duodenum exerts some influence, probably through the agency of a secretion, the removal of which from the body is compatible with life (dogs). So far as we know, Brunner's glands are the only structures located in the duodenum which might be capable of such a secretion, and indeed it is quite tempting to credit them with a specific secretion, the nature of which is yet unknown. In this connection, the crypts of Lieberkühn might play a rôle, but inasmuch as they are found in the jejunum this seems hardly probable. The fact that the fluid collected from a duodenal pouch differs little, or not at all, from the ordinary intestinal juice, in that it is a thin, clear, alkaline fluid, possessed of very feeble digestive powers, and when injected into the circulation in doses of from 10 to 20 c.c. exerts no effects at all, not even on the blood pressure, might suggest that it acts on some other secretion formed lower down in the bowel, forming an activated substance which is necessary to life. The fact that the animal always lives whenever the duodenal secretion is permitted to drain into the part of the bowel below, by means of an anastomosis of the jejunum into the duodenal pouch, or by a rubber tubing connecting the duodenal pouch with the intestines lower down, or by permitting the duodenal secretion to pass into the stomach and be discharged into the bowel with the stomach contents through a gastroenterostomy, argues further for some such conclusion.

12. Male Climacteric.—Church takes it for granted that the question of the climacterium in the male is an acknowledged fact. He says that the management of these patients is a task requiring extreme tact, great patience, and a variety of expedients. For some, change and travel answer fairly well, although they are not happy in it. A reduction of the daily work is almost imperative in every case. General measures which serve to ease and improve the general circulation and build up the physical health, answer a good purpose. Vasodilators have seemed to him to be of essential value. Any tendency to sclerotic processes in arteries, liver, or kidneys—conditions, of course, commonly found at the age presented by patients of this class—have their own indications. On the whole, the development of any of these nervous and mental manifestations in men between the ages of fifty and sixty-five is not of itself of serious import.

14. Mercuric Chloride.—Pitzman asserts that mercuric chloride used in moist packs in dressings of wounds does not exert antiseptic action on the bacteria in the tissues for the following reasons: It would have to exist in the tissues as excess free bichloride which is scientifically hardly conceivable. If it existed as free bichloride it would destroy the body cells as well as the bacteria. It is ordinarily not absorbed from a dressing.

MEDICAL RECORD.

July 23, 1910.

1. The Ethical Aspects of Expert Testimony in Relation to the Plea of Insanity as a Defence to an Indictment for Crime. By Carlos F. MacDonald.
2. The Anomalies of Ocular Dominance, By George M. Gould and A. C. Durand.
3. The Noguchi Method of Serum Diagnosis of Syphilis; Its Practical Value, By Daisy M. Orleman Robinson.
4. Some Remarks on Deaf Mutism, By E. W. Scripture.
5. Further Observations on the Pathology of Joint Tuberculosis and Practical Deductions therefrom, By Leonard W. Ely.
6. Lupus—Its Treatment by the Röntgen Rays, By Charles Lester Leonard.

7. Obesity: Its Relation to Other Diseases and Its Significance. Also Some Observations on Prophylaxis, By I. B. Kronenberg.
8. An Historical Note on the So Called Ludwig's Angle or the Angle of Louis, By Edward H. Goodman.

1. **Expert Testimony.**—Carlos F. MacDonald remarks that there can be no question that the existing methods of presenting medical expert testimony in the trial of criminal causes are not only imperfect, but are attended with serious evils which tend to bring the medical profession into disrepute with the public, with the bar, and with the courts. He discusses theoretically the reform, finding the causes of this evil in the usage of the courts which permits of the selection of experts by counsel on either side without regard to their qualifications and standing, usually the only requirement being that the expert selected is willing to give an opinion in favor of that side of the case; and, in the absence of any standard of qualification, fixed by the medical profession, as regards special study and experience, in a given branch of medical science, which would, at least theoretically, render the would be witness sufficiently skilled in that branch or subject to justly constitute him an expert.

3. **The Noguchi Method of Serum Diagnosis of Syphilis.**—Daisy M. O. Robinson experimented to find out whether the Noguchi method is present in diseases other than syphilis. Among the cases thus examined a positive reaction was obtained only in syphilis. In regard to the positive results in certain cases of leprosy, yaws, etc., this modification is similar to the Wassermann method. The investigations of Boas, Sachs, and others show that the use of unheated serum causes nonspecific complement fixation in some nonsyphilitic cases, while this does not occur when one employs inactivated serum. But this difficulty can be avoided by adopting the method of preparation of antigen described by Noguchi, as already stated. The recent reports of some investigators, to the effect that the use of active serum in Noguchi's system sometimes causes positive reaction in nonspecific cases, can be attributed to their indiscriminate use of antigen. These authors almost invariably used unfractionated whole alcoholic extract of macerated liver, which, of course, is rich in undesirable proteins and glycogens.

4. **Deaf Mutism.**—Scripture remarks that the following exercises are typical of those used in the best schools for deaf mutes: Breathing through the nose and mouth are first taught. The teacher breathes through the nose on a slate or a mirror and shows the two moist spots; the child learns to imitate this. The mouth breathing produces one spot. The low position of the tongue is necessary for proper speech. It is taught by showing the position and using the mirror, and by a breath exercise. This latter rests upon the fact that the child cannot produce a good sized spot on the slate unless he keeps his tongue down. Tongue gymnastics are next used to limber up and train the muscles which have never received the proper development. The tongue is protruded, retracted, moved to each side, turned up, etc. Tongue training preparatory to various consonant sounds is introduced. Vibration of the vocal cords is taught by feeling. The pupil puts his hand on the teacher's chest and also on his own. He thus learns to make a tone. He learns to raise and lower the voice, and by careful drill is able to make a fairly good tone. The physiological alphabet consists of a set of diagrams giving the typical positions of the tongue and lips for the chief sounds of the language. Combinations of consonants and vowels are now read at sight. Through these combinations words and sentences are developed. Lip reading of words and sentences is taught by having the patient watch the teacher's lips while she distinctly enunciates some word. Thus he learns to pick up objects off a table, to point out parts of the body, to obey commands, etc. When deafness is acquired after the person has learned to speak, the teaching of lip reading should begin at once. The voice then retains its natural character and the person can go right along with his education.

5. **Joint Tuberculosis.**—Leonard W. Ely remarks that all treatment of tuberculous joints should be directed to depriving them of function. In children conservative treatment planned on this basis will usually effect a cure. In adults an operation is usually necessary, and the object of this operation should usually be to deprive the joint of function.

6. **Treatment of Lupus by Röntgen Rays.**—Charles Lester Leonard reports three cases of lupus treated with Röntgen rays. He thinks that the progress which has been made in the treatment of lupus by the Röntgen rays is made evident by good results in grave cases, and shows that the prognosis for recovery is not absolutely unfavorable in extensive cases as regards cure, and that permanently successful results are attained in all cases, and are not to be expected only in recent limited cases suitable for excision.

BRITISH MEDICAL JOURNAL

July 9, 1910.

1. An Address on Certain Subjects of Surgical Interest, By Herbert F. Waterhouse.
2. Modern Treatment of Fractures, By F. N. G. Starr.
3. Accuracy in the Diagnosis of Urinary Disease, By Bernard J. Ward.
4. On the Early Diagnosis and Treatment of Tuberculous Kidney, By Andrew Fullerton.
5. Suprapubic Drainage of the Bladder as an Alternative to Prostatectomy and as a Relief Operation, By J. B. Pike.
6. The Incidence of Tuberculosis in Childhood, By Franz Hamburger.
7. Address on the Prevention of Mortality from Pelvic Operations, By H. Macnaughton-Jones.
8. On the Presence of Sugar in Healthy Urine as a Source of the Osazone Reaction, By F. W. Pavy and H. W. Bywaters.

2. **Modern Treatment of Fractures.**—Starr favors the open method in the treatment of fractures.

3. **Diagnosis of Urinary Disease.**—Ward speaks of the cystoscope in the distinctive diagnosis of bladder diseases and in the location of disease; the use of cystoscopy combined with catheterization of the ureters; radiography of the kidneys and ureters; and other methods of examination.

4. **Early Diagnosis of Tuberculous Kidney.**—Fullerton found in a series of 400 cases of all sorts of bladder and renal complaints requiring the use of the cystoscope for diagnosis twenty-four, that is six per cent., cases of tuberculous kidney. In

thirteen of these the diagnosis was confirmed by operation. He makes the statement that tuberculosis of the bladder is never only confined to this organ, in most cases the kidneys are involved, and in others the epididymis, testes, or prostate. He believes that the most frequent cause of tuberculosis of the bladder is descending infection from the kidney. The most striking change was that the orifice of the ureter in the bladder instead of being a slit had become converted into a circular opening. In addition to this change there will be found red areas, scattered around the ureteral orifice. Fullerton favors removal of the affected kidney.

5. **Suprapubic Drainage of the Bladder as Alternative to Prostatectomy.**—Pike reports two cases in which removal of the growth or of the prostate seemed hopeless, and in which he found suprapubic drainage a great help.

6. **Tuberculosis in Childhood.** — Hamburger states that the majority of persons become infected by tuberculosis in childhood. The frequency of tuberculous infection increases from year to year, while tuberculous morbidity—that is, the frequency of manifest tuberculous disease—decreases from year to year. Tuberculosis is very commonly latent, producing no symptoms; this is especially so if the infection dates from the third or fourth year. The prognosis of tuberculosis in childhood becomes more favorable the older the person is at the time of the first infection.

LANCET.

July 9, 1910.

1. Cerebrospinal Fluid. By F. W. Mott.
2. The Behavior of the Leucocytes in Infection and Immunity, By F. W. Andrews.
3. Submucous Resection of the Nasal Septum, with a Review of 120 Cases, By H. Bell. Tawse.
4. The Examination of Fæces in Medical Practice. By Oscar Kraus.
5. The Administration of the Public Health and Education Acts in Relation to the Prevention and Cure of Diseases of the Throat and Nose, By T. Jefferson Faulder.

1. **The Cerebrospinal Fluid.** — Mott, in his second Oliver-Sharpey lecture, speaks of the pathology of the cerebrospinal fluid, and gives the following table:

Properties, substances, &c.	Normal.	Pathological.
Appearance	clear, like water	serous, turbid, purulent, fibrinous, yellow, red, brown.
Specific gravity	1.004-1.007	increased.
Reaction	alkaline	alkaline.
Tension	66 drops per minute	hypertension, hypotension.
Cryoscopy	—0.55°	hypercryoscopic or hypocryoscopic.
Permeability of subarachnoid space	none	variable and unstable.
Presence of drugs		occasional instances.
Toxicity	none	it does exist, but rare.
Virulence	none	sometimes marked.
Chemical Alterations.		
Proteins	trace globulin; no albumin	excess globulin, albumin, nucleoprotein.
Lipoids	none	cholesterol; splitting products of lecithins and sphingomyelin.
Sugar	0.15-0.18%	excess in diabetes; probable decrease in dementia præcox.
Urea	0.15%	excess in uræmia.
Choline	none	probable trace in acute nervous degeneration.
Chlorides	0.6-0.7%	
Carbonates	0.13%	
Potassium salts	0.03% CKL	no apreciable alteration.

In explanation he remarks that even in marked pathological conditions, such as general paralysis of the insane, the fluid may appear clear like water, and only on further investigation may its pathological changes be discovered. Occasionally, however, the fluid may be turbid, purulent, serous, fibrinous; its color may be yellow, being tinged with bile, red from the presence of blood, or brownish red from the presence of altered blood. As a rule drugs do not pass into the cerebrospinal fluid, and most observers have not confirmed Majendie's original observations relating to the passage of potassium iodide into the cerebrospinal fluid, a fact upon which Majendie laid great stress as showing the manner in which this drug benefited in such a marked degree certain diseases of the nervous system. Recently an important observation has been made by Ager. He has obtained satisfactory results following the administration of urotropin in meningeal affections; the drug is said to be excreted in the cerebrospinal fluid in half hour to one hour after ingestion, and to exert a marked antibacterial effect. It was first employed in a case of cerebrospinal fistula following trephining for cerebral tumor, in which the discharge became purulent. After the administration of thirty grains daily for a week the temperature became normal and recovery ensued. Experiments made on animals have been confirmatory. It is known that tetanus toxine does not pass into the cerebrospinal fluid.

3. **Submucous Resection of the Nasal Septum.** —Tawse speaks of the Killian operation for submucous resection of the nasal septum which he describes in detail. He uses a local anæsthetic, consisting of a mixture of equal parts of twenty per cent. cocaine hydrochloride and 1 in 1,000 adrenalin chloride. The indications for Killian's submucous resection he gives as follows: Nasal obstruction with its attendant train of evils—catarrh, etc., from a deviated septum. Headache from pressure of a spur on the middle turbinate. Rhinorrhœa and sneezing—occasionally hay fever and asthma from contact of a spur with the inferior turbinate. Some inveterate cases of chronic dry rhinitis. Unilateral atrophic rhinitis. Some cases of epistaxis. As a preliminary to ethmoidal curetting or removal of the middle turbinate. As a preliminary measure before dealing with empyema of the frontal sinus or maxillary antrum. In broken noses to restore nasal respiration. To clear a passage for the passing of a Eustachian catheter in cases of chronic middle ear catarrh. Snoring. Where the air ways are naturally very narrow and the septum much thicker than usual, with bulges here and there, but not necessarily deviated, about an eighth of an inch more room can be provided by the operation. Usually in such cases cauterization of the turbinates has failed to effect any marked improvement. In adhesion of the inferior turbinate to the septum apart from or due to operation. For cosmetic reasons.

4. **Examination of Fæces in Medical Practice.** —Kraus deals with the special class of analysis of fæces as practised by him in Carlsbad to determine in patients suffering from disturbances of digestion, how the food is utilized, and how the defective processes can be improved. The methods used differ from those generally employed only to a slight extent.

PRESSE MEDICALE.

May 4, 1910.

1. Direct Toxicity and Anaphylaxis of Cysts Containing Echinococci, By L. Boidin and Guy Laroche.
2. Serum Sickness and Sudden Death Following Injection with Antitoxic Serum, By Alfred Martinet.

2. Sudden Death after Injection of Antitoxic Serum.—Martinet speaks of cases of sudden death after an injection of antidiphtheritic serum. There are three explanations: 1. Death is the direct result of the serum; our author finds that if such would be the case the action of the serum does not at all correspond to the disease, nor to anaphylaxis, but is entirely unknown. 2. Death follows shock, takes places as a reflex syncope. 3. Death is only coincidental.

May 7, 1910.

1. Acute Thyreoiditis and Cardiovascular Complications, By Jacques Parisot.
2. Arrest of Development from Intoxication Producing Dwarfishness, By Maurice Perrin and Louis Richon.
3. Physiological Action of Quinine in Malaria, By André Tournade and Georges Giraud.
4. Lymphadenia, By A. Cleri.
5. Pathogenesis and Paraffin Treatment of Ozena, By Robert Leroux.

3. Physiological Action of Quinine in Malaria.—Tournade and Giraud remark that experience has shown that quinine should be given at the beginning of the febrile attack, 2.5 grammes in quotidian malaria, 2 grammes in tertian, and 0.5 gramme in quartan form. The attack itself is not affected, but those that would follow are suppressed. The dose should be large enough to attack the plasmodia when they are most vulnerable, otherwise the remedy has no influence at all or simply retards the attack. The influence of quinine upon the temperature is certainly not antipyretical.

May 11, 1910.

1. Thermic Influences of High Frequency Currents, By A. Zimmern and S. Turchini.
2. Gummatous Sporotrichosis of the Arm from an Accidental Inoculation in the Laboratory, By Pertin and L. Bruyart.

May 14, 1910.

1. Treatment of Genital Prolapse in an Elderly Woman by Formation of a Partition in the Vagina, By E. Juvara.
2. Clinical Diagnosis of Cancer of the Testicle, By Maurice Chevassu.
3. A Case of Salivary Calculus, By Guibé and G. Mainsot.

1. Le Fort's Operation in Genital Prolapse.—Juvara has applied Le Fort's operation in six cases of genital prolapse in women between the ages of fifty and seventy-five with good results. He describes the technique of the method which should not be used in young women as it makes coitus difficult, or even impossible, and if gestation should occur it would produce a very serious difficulty to delivery.

May 18, 1910.

Duration of Chronic Nephritis, By G. Schreiber.

May 21, 1910.

1. Median Reenforcement in Longitudinal Laparotomies, without Resulting Cicatrices, By L. Chevrier.
2. The Virus of Acute Poliomyelitis, By C. Levaditi.
3. Colon Bacillus Septichæmia, By Hérard de Bessé.
4. The Gases in the Treatment of Stomach Diseases, By Hulmann.

4. Gases in the Treatment of Gastric Disturbances.—Hulmann's treatment of gastric disturbances with carbondioxide seems to be similar to the method introduced by Achilles Rose, of New York.

May 25, 1910.

1. Serotherapy of Anthrax, By L. Boidin.
2. Repose and Exercise Treatment in Pulmonary Tuberculosis, By Alfred Martinet.

May 28, 1910.

1. Diagnosis of Bronchopulmonary Cancer. By Louis Rénon.
2. Radiography of the Appendix, By Paul Aubourg.

2. Radiography of the Appendix.—Aubourg reproduces two radiogrammes of the appendix. The patient should receive milk of bismuth eighteen hours before the radiograph is taken. Two radiographs should be taken, the one with the patient lying on his belly, the other the patient in the upright position; in both cases the plate should rest on the abdomen.

SEMAINE MEDICALE

May 4, 1910.

Scleroderma in Simple Goitre, By Maurice Klippel.

May 11, 1910.

Chronic Muscular Syphilitic Atrophy and Tabes, By Félix Rose and Henri Rendu.

May 18, 1910.

1. Accouchement of the Pygopagus Rosa—Josepha Blazek, By C. Trunecek.
2. The Sisters Rosa—Josepha Blazek, By Marcel Baudonais.

1, 2. The Pygopagus Rosa Josepha Blazek.—See editorial article on page 227.

May 25, 1910.

Pathogenesis of Xanthoma Planum, By A. Chauffard and Guy Laroche.

AMERICAN JOURNAL OF THE MEDICAL SCIENCES

July, 1910.

1. The Value of Optimism in Medicine, By E. L. Trudeau.
2. The Treatment of Arterial Hypertension, By Arthur R. Elliott.
3. The Hæmorrhagical Disease of the Newborn, with Special Reference to Blood Coagulation and Serum Treatment, By Hermann Schwarz and Reuben Ottenberg.
4. The Radiographical Diagnosis and Classification of Early Pulmonary Tuberculosis, By Lewis Gregory Cole.
5. The Medical Aspects of those Toxæmias of Pregnancy Which Tend toward Eclampsia, By Edward F. Wells.
6. Disturbances of the Thyreoid Secretion in Northern Mexico, By Walter C. Alvarez.
7. Typhoid Spermatocystitis and Prostatitis and Their Relation to Chronic Typhoid Bacilluria, By John W. Marchildon.
8. Von Graefe's Sign in Myotonia Congenita (Thomsen's Disease), By Julius Parker Sedgwick.
9. Torsion of the Great Omentum, By A. C. Griffith.
10. The Theoretical Consideration of the Wassermann Reaction and Its Practical Application. Based upon a Study of 2,750 Cases, By D. M. Kaplan.
11. Calcium Metabolism, with Special Reference to Exophthalmic Goitre, By Caroline Towles.
12. How Far is Heredity a Cause of Aural Disease? By B. Alex. Randall.

3. Hæmorrhagical Diseases of the Newborn.—Schwarz and Ottenberg remark that impaired blood coagulation is the immediate cause of uncontrollable hæmorrhages in the newborn. This is probably due to destruction of, or interference with, the production of thrombokinase. Bacterial infection is

the most frequent underlying cause of the disease; but syphilis alone can cause the disease without bacterial infection. The value of serum injections is doubtful. It is important that transfusion should be tried when ordinary measures have failed.

4. **Radiographical Diagnosis of Early Pulmonary Tuberculosis.**—Cole has made a large number of radiograms of incipient cases of tuberculosis. He says that radiographic examination of incipient cases of tuberculosis indicates that in a very large percentage of cases the lesion at the root is more extensive than the parenchymal lesion; and so frequently radiograms show a distinct lesion at the root with no parenchymal involvement that it is reasonable to assume that it extends from the root to the parenchyma. Radiating from the root to the apex in adults, and to the base in children, may be seen infiltration in and around the walls of the bronchi, giving the appearance of the rough bark on the branches of a tree, the air cells supplied by these bronchi are infiltrated with isolated or conglomerate tubercles. The process has the appearance of a tree budding in the springtime. There may be a diffuse fibrous growth extending from the root, without individual or conglomerate tubercles, giving the appearance of a general fibrous thickening and lack of aeration. He states that he is very cautious about making a diagnosis of tuberculosis in those cases in which the typical tubercles are absent. The bronchi may be normal in size, or they may be dilated and full of exudate, or empty. Tuberculous infection around the root of the lung may involve the glands, the bronchi, or it may be peribronchial in character. Glandular enlargement may be circumscribed with clear cut edges but more frequently there is a group of small glands connected by fibrous tissue which extends out along the bronchi and bloodvessels. There may be infiltration in or around the larger bronchi without thickening at the root and without parenchymal involvement. The walls of the larger bronchi may be infiltrated, and when seen on cross section give the appearance of circles or figure 8, and may be surrounded by a few isolated tubercles, which would indicate activity. The infiltration of the root may be shown in the active stage, when it has a soft diffuse appearance which is readily distinguished from the old healed calcified lesion, which is usually the result of infection during childhood. Healed tuberculous processes vary in their appearance according to the variety and extent of the lesions and the time that has elapsed since they were active. The exudative process when checked shows a much greater tendency to resolve than is generally supposed, and all that may remain of quite an extensive exudative process is a few scattered calcified tubercles. The subacute productive process is most typical in the early stage. The tubercles are small, dense, more isolated, and their edges are clear cut and well defined; and where several unite to form a conglomerate tubercle they do not lose their identity. It does not go on rapidly to the stage of consolidation, and the areas where it does occur are small and circumscribed; it can readily be traced back to the extension from the root by the fibrous appearance that radiates from the root and connects the areas of consolidation. Chronic miliary tuberculosis is recognized by the extremely small, clear cut, well defined tubercles. In a typical case both lungs are equally affected, the process shows no tendency to consolidation, and there is not the fibrous appearance usually presented in the chronic fibroid consolidation. Chronic, fibroid consolidation is usually limited to one lung or part of one lung. The consolidation may or may not be very dense and there is retraction of that side of the chest; frequently the ribs are drawn together, which gives a lateral curvature to the spine. The diaphragm is retracted and the heart is drawn to the affected side, or some say it is pushed over by the emphysematous lung on the opposite side.

11. **Calcium Metabolism.** — Towles observes that calcium given in the form of the lactate enters into the general metabolism or allows the calcium already present in the body to be utilized without loss. Given by the mouth there is no toxic effect from the administration of twenty grammes of calcium lactate over a period of fifteen days. The calcium metabolism of Basedow's disease shows no special peculiarity; it runs parallel with the nitrogen, and in those periods of the disease in which there is a loss of nitrogen there is also a loss of calcium—a parallelism which is found in other pathological conditions.

AMERICAN JOURNAL OF OBSTETRICS.

July, 1910.

1. Uterine and Vesical Prolapse, By C. Jewett.
2. Uterine and Bladder Prolapse, By J. M. Baldy.
3. Genital Prolapse. Its Operative Correction Based on a New Study of Cleavage Lines and Sliding Segments, By R. L. Dickinson.
4. Intramural Sequestration and Fixation of the Corpus Uteri and Fundus Uteri for the Cure of Procidentia Uteri Existing in Women with Whom Further Pregnancy is not Possible, By P. A. Harris.
5. A Brief Review of Some of the Contributions to Medical and Surgical Literature by George Granville Bantock, By I. S. Stone.
6. Varicocele in the Female, By O. Hofmann.
7. Heart Disease in Pregnancy and the Puerperium, By J. F. Moran.
8. Friedreich's Ataxia, By E. L. Hunt.
9. The Exceptionally Bright Child, By M. P. E. Groszmann.
10. The Differences between Anatomical, Physiological, Psychological, and Chronological Age as Causes of Derailment, By C. W. Crampton.
11. Ethnic Factors in Education, By M. Fishberg.
12. Congenital Hypertrophic Pyloric Stenosis with Report of Case, By G. L. Kaufmann.
13. Treatment of Cervical Tuberculous Adenitis at the Sea Breeze Hospital, By L. W. Ely.

1. **Uterine and Vesical Prolapse.**—Jewett divides all operable cases into three classes. 1. Uncomplicated uterine or vesical prolapse. 2. Extreme prolapse of uterus and bladder. 3. Cases between these extremes. Of these cases the simple cystoceles require firm reattachment of the lower end of the anterior vaginal wall to the fibrous structures at the posterior face of the pubic bones on either side of the urethra supplemented by perineoplasty and resection of the redundant fascia. Uterine descensus will require high colpoperineorrhaphy, with round ligament operation, and possible amputation of cervix. In the second group hysterectomy is indicated with proper suture of the broad ligament stumps to the vagina, or the stumps may be shortened, sutured together, and the bladder and vaginal

walls attached to them. In the third group some form of interposition operation is indicated, the uterus for most of its length being made a constituent part of the pelvic floor.

2. **Uterine and Bladder Prolapse.**—Baldy considers the repair of these conditions in two divisions including: 1a. Those in which there is a moderate cystocele with descent of the upper pelvic organs; b, those in which there is more or less stretching of the anterior wall together with the descent of the upper pelvic organs. 2. Those in which there is complete prolapse of all the organs in the pelvis. In the first class the cure is simple and easy by modification suitable to each case of the original Sims oval denudation, the wound being closed in two layers. This operation is superior to any of the flap splitting methods which are regarded as fallacious, superfluous, unnecessary, mischievous, and dangerous. Curettage and amputation of the cervix are added if necessary. In the second class the uterus is fixed to the abdomen, prior to the menopause, while subsequent to the menopause hysterectomy is recommended with sufficient resection of the vaginal wall, and attachment of the vaginal stump to the abdominal wall.

3. **Genital Prolapse: Its Operative Correction Based on a New Study of Cleavage Lines and Sliding Segments.**—Dickinson urges the importance of recognizing certain cleavage planes in the pelvic diaphragm and intervening segments that slide. The cleavage runs, 1, postpubic close to the bones; 2, in the urethrovaginal septum; 3, in the rectovaginal septum; 4, along the anorectal canal. If there is extensive descent of the urethral segment only ventral fixation at the rear or top of the pubes will hold the upper urethra and anterior bladder wall. The second segment, vagina, bladder base, and cervix is the hernial mass. For these cases the author recommends ventral fixation of the bladder with or without vaginal hysterectomy. The retroanal segment, if badly prolapsed, will call for sigmoid fixation, and as the widely open bony outlet of the pelvis may have no tissues from which a diaphragm can be made it may be necessary to take flaps from the buttocks.

Proceedings of Societies.

ASSOCIATION OF AMERICAN PHYSICIANS.

Twenty-fifth Annual Meeting, held in Washington, D. C., May 3, 4, and 5, 1910.

The President, Dr. Henry Hun, of Albany, in the Chair.

(*Continued from page 192.*)

The Epidemiology of Poliomyelitis.—Dr. Joseph Collins, of New York, said that the epidemicity of the disease commonly called anterior poliomyelitis was abundantly proved by the records of upwards of fifty epidemics. The occurrence of this disease in epidemics necessitated the admission of its parasitic origin. To aid in the recognition of the parasite, one must study the influence of meteorological agents and their diffusion, the vehicles by which they were introduced into the body, the personal and social conditions which influenced infection, the circumstances that determined the decline and extinction of epidemics, and, in general, all the factors that had any bearing upon the epidemic movements. A study of the epidemics of this disease showed that the influence of meteorological agencies was most striking. Practically all the epidemics had occurred during or after a protracted heat, frequently after drought. The occurrence of disorder of the digestive tract in nearly half the cases would suggest that the vehicles by which the parasites were introduced into the body might be food stuffs, and, apparently, personal and social conditions had practically very little to do with the occurrence of the disease. The circumstances that determined the decline and extinction of the epidemics were not unlike those that governed the laws of anticipation, associations, and antagonism in epidemic movements. The variations in the mortality of epidemics occurring in the same section of the country in different years showed that anterior poliomyelitis conformed to the laws that governed the fluctuations or mutations of other epidemic diseases. Half a century had elapsed since Heine published the first known description of the disease which was now commonly called anterior poliomyelitis. Poliomyelitis had prevailed epidemically in many parts of the world during the past twenty-five years. Nothing had been found in the literature antedating 1843 which indicated that the disease existed. The most remarkable thing in the epidemicity of poliomyelitis was its seasonal occurrence. The inference to be drawn was that cold was inimical to the saprophytic growth of the nonobligatory parasite. Another interesting feature of epidemic poliomyelitis was its communicability. The mortality rate varied very decidedly in different epidemics. The most careful investigations had failed to reveal that the epidemic prevalent had anything to do with unhygienic surroundings.

The Pathology of Poliomyelitis.—Dr. B. Sachs, of New York, said that recent epidemics of anterior poliomyelitis had helped to shift the chief interest in this disease from the study of the pathology to the questions of the ætiology and bacteriology of infantile spinal paralysis; nevertheless, it would be of some value to consider to what extent the advanced study of the morbid changes bore out the modern conception of the disease. Our present day knowledge we owed to the studies of certain men who had the advantage of being able to study the autopsy findings in eight cases of the recent New York epidemic. This disease should be rightly described as a polioencephalomyelitis, the chief effect of which was noticed upon the anterior gray matter of the spinal cord. It was not limited to the anterior portion; the central gray matter and the posterior horns were also affected. The studies of recent epidemics showed a general hyperæmia of the meninges both of the brain and cord; hence it was not surprising that meningeal symptoms had been so frequently noted. In the acute cases the gray matter of the cord appeared brownish red; inflammation of the pia mater was found surrounding an infiltration of the cord. The infiltrations were either diffuse or localized around the vessels. This infiltration was most marked in the sacral and lumbar segments, and next in the

cervical. The bloodvessels evidently played an important rôle; it was chiefly but not exclusively the anterior spinal artery. He believed the disease was of the order of interstitial and not a parenchymatous inflammation, at least not primarily. The ganglion cells were found in various stages of degeneration. It was well worth noting that the ganglion cells might be seen surrounded by small round cells or polymorphonuclear cells; in some instances they had entered the cells, thus representing a true neurone aphasia. The ganglion cells did not disappear group by group, but the cells that disappeared were in areas in which there was a marked interstitial change. The cells of the column of Clarke were found to be degenerated in two cases reported by Strauss. In five of seven cases examined by Strauss, the ganglia showed the same evidences of an inflammatory process and the findings were very similar to those in rabies. Entirely similar changes were found in the cords of monkeys to which the disease had been communicated. The pathological findings were in entire agreement with the infective character of the whole morbid process. It might not be out of place to point out that the changes in other organs also pointed to a general infective process. In the lungs areas of bronchopneumonia had been found; in the liver and kidneys a parenchymatous degeneration had been made out. The spleen was invariably congested and firm and generally enlarged. In one case there was a general enlargement of the glands of the body, and in two cases petechiæ were present in the skin.

Poliomyelitis: Animal Pathology.—Dr. Simon Flexner, of New York, reported on the experimental study of this disease in monkeys, which had yielded a large number of important facts relating to the spontaneous disease in man. The nature of the virus had been discovered, many of its properties had been ascertained, some of its immunity effects had been established, the clinical and pathological peculiarities of the disease had been elucidated, and a basis had been secured on which to develop measures of prevention. What he gave had already appeared in the literature during the past few months.

Dr. Mark W. Richardson, of Boston, reported what had been done by the State Board of Health of Massachusetts during the past three years. Since 1907 the disease had been on the increase in the State; during that year the number of cases was 235; in 1908 the number was 185; and in 1909 it was nearly 1,000. He said that the disease was not essentially a city disease. In Boston they had 299 cases, and this city ranked sixty-fifth among the cities and towns of the State in which this disease appeared. It was interesting to note that among 3,600 children in the various institutions of the State, only one case of acute anterior poliomyelitis was found in a child under fifteen years of age. This was interesting in proving that children living in these institutions and protected from those who had the disease did not get the disease. A circular letter was sent to the different physicians in the State recommending that when this disease appeared the patients should be quarantined as though it was a case of scarlet fever. Urotropin was also recommended. In the cases that came to autopsy, an enlarged thymus gland was found. Dr. Richardson asked if this was the experience of others.

Dr. B. Sachs, of New York, said that other organs than the thymus would show evidences of a general infection. In the lungs there would frequently be found a bronchopneumonia, and the spleen almost always gave evidences of a general infection. In one case he saw every single gland in the body was found to be enlarged.

Dr. Flexner thought that by means of animal experimentation it would be quite easy to determine the effect of urotropin in this disease. The use of the various disinfecting agents had shown that it was not difficult to destroy the virus. In autopsies the thymus gland had been found to be enlarged very frequently.

The Electric Cardiogram in Clinical Diagnosis.—Dr. L. F. Barker, Dr. A. D. Hirschfelder, and Dr. G. M. Bond, of Baltimore, presented this communication. They gave a lantern slide demonstration illustrating the electrocardiograms as a supplement to other methods of investigating cardiovascular conditions. The curves were especially helpful in the diagnosis of cardiac arrhythmias, including the extra systoles and heart block, in hypertrophy of the right or left ventricle, in atrial paralysis and the pulsus irregularis perpetuus, in tachycardias and bradycarias, and in fibrillation of the atrium. The work had been done with Einthoven's string galvanometre (smaller model of Edelmann).

Lantern Slide Demonstration of Electrocardiograms.—Dr. Walter B. James, of New York, described the electrocardiograph and gave a brief account of the history of its development, construction, and mode of use, and outlined the present value of the instrument. It consisted essentially of a very delicate string galvanometre which made a graphic record of the action current of the heart muscle. This was permanently recorded by means of a photographic apparatus, using a moving strip of sensitized film. The normal electrocardiogram showed the changes of potential in the auricle and the ventricle. In disease this method promised to throw much light upon the activity of the heart muscle itself and the way in which the wave of excitation passed through it.

A Study of the Development of the Epiphyses of the Hand and Wrist for the Purpose of Classifying the Cadets at Annapolis.—Dr. Thomas Morgan Rotch, of Boston, said that after the presentation of A Study of the Development of the Bones for Determining the Anatomical Index for the Grading of Children up to Thirteen Years at the association meeting of 1909, the Secretary of the Navy requested that a similar Index be prepared in grading the naval cadets at Annapolis. A new test for grading the cadets was found to be needed, as some of the young men ready to enter, by the tests usually made, later were unable to withstand the strain. Others would go along without a breakdown until the four years were nearly up and then break down. For this reason the government desired some additional means of ascertaining at the beginning whether an individual student would be likely to withstand the strain, both mental and physical, through which he would have to pass. During

the past year work in this direction on young men from fifteen to sixteen up to about twenty years of age had been carried on with the following results. It had been found that the development of the hand and wrist represented so well that of the other epiphyses of the skeleton, that they furnished the best material for the study of epiphyseal development, and in fact presented an index of the general epiphyseal development from birth to the completion of development at the twentieth or twenty-first year. We, therefore, could practically make use of these different stages of epiphyseal development so as to cover two distinct periods, one corresponding to the first thirteen or fourteen years of life, and the other to the period from fourteen or fifteen up. The earlier period was determined by the appearance in succession of the carpal bones and the epiphyses of the radius and ulna. The later period was represented by the different stages of ossification, leading up to complete union, of the epiphyses of the phalanges, metacarpal bones, ulna, and radius. This gradual union of the epiphyses furnished an anatomical index for grading the older individuals, the grading being determined by the different periods at which the union took place in the above mentioned epiphyses. Epiphyseal development seemed in some way to be connected with the mental development, while the other factors did not. It should be borne in mind that it was the equilibrium of mental and physical development which should be watched, this being accomplished by having Röntgen pictures taken from time to time as the cadet was advanced, and thus determine whether he should be advanced or even retained in the government's service. Certain charts and pictures showing cadets' hands in some of the stages of development were presented.

Congenital Syphilis of the Heart.—Dr. A. S. Warthin, of Ann Arbor, said that a few good studies of this condition had been made, but the importance of certain syphilitic affections of the heart in young people was not recognized clinically. Special attention was called to the diffuse fibrosis of the myocardium due to congenital syphilis, with a study of the pathology of this condition and of the occurrence of spirochætes in the heart wall. New pathological and clinical features were pointed out. The relation of congenital fibrosis of the heart to cardiac insufficiency in young and early life was emphasized. Cardiac changes occurred in all cases of congenital syphilis in which the liver showed the changes characteristic of congenital syphilis. The association of infantilism and delayed puberty with this form of heart lesion was shown.

Dr. Isaac Adler, of New York, said that the histological findings of Dr. Warthin were practically the same as he had met with years ago; the only point of difference was that wherever he found interstitial changes, they were not only in the circumvascular tissues, but also in the vessels themselves. This was purely an interstitial affair.

Dr. Warthin said that in cases of sudden death occurring in children the heart should always be examined microscopically. He felt that in many cases syphilis would be found as a cause of sudden death.

The Structure of the Sweat Glands in Cases of Chronic Nephritis.—Dr. Herbert U. Williams, of Buffalo, said that, in view of the very general practice of attempting to relieve the kidneys by inducing free perspiration, it seemed that a study of the condition of the sweat glands in cases of chronic kidney disease might be interesting. In about seventy-five cases, mostly of chronic interstitial nephritis, the histology of the sweat glands in skin from the sole of the foot was studied; skin from the abdomen was also studied in about half these cases. Subjects showing obvious skin disease were excluded. The various pathological conditions found in the sweat glands were demonstrated by means of lantern slides from photomicrographs.

Dr. Warthin said that it was difficult to trace any relationship between the pathological changes occurring in the kidneys and those in the sweat glands. These changes in the sweat glands were quite common and he had examined many of them.

Dr. Williams had selected the sole of the foot for his experiments because this was a region which was free of hairs. The examination of skin taken from the axillary region gave results that were perfectly worthless.

The Relation of Combined Intoxication and Bacterial Infection to Necrosis of the Liver, Acute Yellow Atrophy, and Cirrhosis. — Dr. Eugene L. Opie, of New York, read this paper, which he illustrated by lantern slides. He said that by the administration of poisons which attacked the liver, namely, chloroform or phosphorus, in combination with bacterial infection, it was possible to reproduce the peculiar midzonal necrosis which in man occurred in association with bacterial infection, under conditions which were not fully understood. The same combination of poison and bacteria, apparently acting with maximum intensity, produced a lesion resembling acute yellow atrophy in man; necrosis and hæmorrhage were followed by regenerative changes. When the poison in association with bacterial infection repeatedly produced relatively slight changes, cirrhosis of the liver occurred and advanced much more rapidly than that produced by the poison alone.

Dr. S. J. Meltzer, of New York, said that the results obtained by Dr. Opie were very practical and important. Some years ago he had presented a paper pointing out certain facts now generally recognized, that any bacteria like the one that caused typhoid fever, or streptococci, when introduced into the circulation, quickly disappeared. But if there was a slight injury inflicted, then these bacteria would develop. In Dr. Opie's experiments it might be that the chloroform or the phosphorus caused such an injury.

Dr. William H. Welch, of Baltimore, said that Dr. Opie's results were extremely interesting to pathologists as bearing on the ætiology and pathogenesis of some cases of hepatic cirrhosis. As had been stated, the colon bacillus, for instance, under certain circumstances, disappeared promptly; but if anything occurred which caused it to remain in the liver, necrosis followed. However, when the colon bacillus disappeared from the liver and appeared in the gallbladder, it could survive there indefinitely, and thus the gallbladder might become a bacillus carrier. The typhoid bacillus might remain in the gallbladder for months—another instance of a ba-

cillus carrier. The experimental work upon the liver, particularly with alcohol, had been very unsatisfactory. He had never succeeded in producing cirrhosis of the liver with alcohol. He believed that Dr. Opie's inferences were correct. There was something which produced an injury to the liver; but, with this organ's enormous power to regenerate, cirrhosis did not follow. In order to produce cirrhosis, therefore, one must inhibit this organ's power to regenerate. A combination of the action of toxines with something which would prevent this regenerative power might result in cirrhosis.

Dr. WARTHIN asked for an explanation of an interesting case. A woman, seven months pregnant, was operated upon for gallstones and died. Portions of the liver were immediately removed, and kept in a warm room for six hours. At the end of this period there were necrotic areas throughout these portions of liver tissue, but none were found in the liver tissue that was not removed immediately after death. This necrosis, this rapid development of central necrosis, appeared in the liver tissue *after* its removal from the body.

Dr. WILLIAM G. MACCALLUM, of Baltimore, emphasized the fact that the liver was an organ that possessed an enormous reparative power.

(To be continued.)

Book Notices.

[*We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.*]

Introduction to the Analysis of Drugs and Medicines. An Elementary Handbook for the Beginner. By BURT E. NELSON, Chemist to the New York State Hospitals, etc. First Edition, First Thousand. New York: John Wiley & Sons, 1910. Pp. xii-384. (Price, $3.)

There is given in this volume a most comprehensive account of the various chemical and microscopical procedures followed in the examination of drugs and medicinal chemicals and mixtures. It makes its appearance at a timely moment in view of the impetus which has been given to the work of drug analysis by the enactment of the national food and drugs act of June 30, 1906. The chapter on the Principles of Microscopical Drug Analysis is especially full and informing, while the numerous tables with which the volume closes should prove exceptionally valuable for reference both to students and skilled analysts.

The author employs one or two peculiarities of expression that jar on the ear, as, for example, on page 91: "Dissolve the *melt* in water." This is not a misprint for malt, but refers to a product of fusion, a molten body. The author's definition of pharmacology, on page 243, does not agree with that of the Education Department of the State of New York, as expressed in the New York State pharmacy law. These and a few minor printer's errors will no doubt be taken care of in a later edition, which we are confident will be called for soon, since the present edition is limited to 1,000, a small output for a work that is likely to prove very popular as a textbook in colleges and as a reference book for special workers in food and drug analysis. The book is of uniform size with several of the scientific textbooks issued from the press of John Wiley & Sons and is rather lighter in weight and more convenient to handle than some that we have reviewed recently.

Soured Milk and Pure Cultures of Lactic Acid Bacilli in the Treatment of Disease. By GEORGE HERSCHELL, M. D., Lond. Fellow of the Royal Society of Medicine. Second Impression, Ninth Thousand. London: Henry J. Glaisher; Chicago: W. T. Keener & Co., 1909. Pp. 32. (Price, 1s. 6d.),

That a second printing of this book has been made necessary in a period of a little over six months is convincing evidence of the interest which is taken in the theory and practice of the lactacidgen treatment of autointoxication and intestinal putrefaction. In this volume perhaps the greater amount of space is devoted to descriptions of methods for diagnosticating the existence of intestinal putrefaction, the appropriate tests being given. A good account is given of the various forms of lactacidgens and their clinical value, several cases being recorded in which the treatment had been administered successfully. It is perhaps as complete and satisfactory a manual of the uses of lactic acid bacilli in the treatment of disease as is available in the English language.

Introduction to Practical Chemistry. For Medical, Dental, and General Students. Specially Adapted to Meet the Requirements of the Conjoint Boards' Examination of the Royal Colleges of Physicians and Surgeons, but Suitable for General Use in Schools and for Private Students. By A. M. KELLAS, B. Sc. (Lond.), Ph. D. (Heidelberg), Lecturer on Chemistry at the Middlesex Hospital Medical School, etc. London: Henry Frowde (Oxford University Press) and Hodder & Stoughton, 1909. Pp. viii-262.

In this volume the author has made an endeavor to divert practical chemistry work as taught in medical colleges, the carrying out of analytical tests, etc., from its routine, cut and dried, memory taxing character, and invest it with more interest for the student. He has succeeded more or less in this by explaining the reactions more fully than is generally done in practical textbooks. In thus giving reasons for the various steps taken in the working out of a test he smooths the path for beginners in chemical analysis.

Of the five parts into which the book is divided, the first and second parts deal with the elementary theories of chemistry, the onomatology of the science being defined and simple experiments given to demonstrate the use of apparatus and the preparation of typical compounds of the metals. The systematic detection of metals by the flame as well as by the wet method is expounded in Part III, thirty pages of which are occupied with a tabulated summary of the properties of the notable compounds of the metals, a novelty which should prove exceedingly useful to the student. Part IV treats of the identification of acid radicals and the metallic oxides and hydroxides. It contains useful solubility tables. Part V deals with quantitative analysis, both gravimetric and volumetric. Illustrations are used to show the use and nature of the apparatus named in the examples. Although the book does not accord with our idea of what a textbook for medical students should be, he who masters it under the guidance of a competent instructor will

possess a good working knowledge of chemistry. Like all productions of the Oxford University Press the book is clearly printed on good paper, notably free from typographical errors, and the binding is attractive.

The Essentials of Chemical Physiology. For the Use of Students. By W. D. Halliburton, M. D., LL. D., F. R. S., Fellow of the Royal College of Physicians, Professor of Psysiology in King's College, London, etc. Seventh Edition. New York, London, Bombay, and Calcutta: Longmans, Green, & Co., 1909. Pp. xi-280.

A little over two years have elapsed since the sixth edition of this concise manual of chemical physiology was reviewed in this journal. The book is so well known to all interested in the subject as to make an extended notice of a new edition unnecessary. It only remains to say that it has been thoroughly revised and brought up to date. The elementary course, extending to 192 pages, is still confined to twelve lessons, but included is an important new one on typical organic compounds, which appears in the seventh edition as Lesson II. This, as the author remarks in the preface, will serve to remind the student of the properties and reactions of certain organic bodies a knowledge of which is essential for the intelligent comprehension of physiological proximate principles. Scarcely a page of the work has escaped revision. As a class textbook it present many points of superiority over other books of its kind, the methods of presentation being remarkably clear and easily understood. It is a pleasure to commend it to teachers of chemical physiology, the science which is assuming every day such an increasing importance in medicine.

MEDICOLITERARY NOTES

Our friend Dr. Ben Trovato had himself "refracted" the other day by a colleague whose specialty is ophthalmology; the usual results followed the installation of a solution of atropine—dilatation of the pupil and paresis of the ciliary muscle. While awaiting his new glasses, Dr. Trovato walked about a good deal, since he could not read. An impecunious acquaintance met him. "Let me have a ten spot, Ben, for a few days, there's a good chap," begged the acquaintance. "I should like to accommodate you, old man," answered Ben with regret in his voice, "but the fact is my accommodation is paralyzed."

* * *

No practitioner has made a thorough physical examination of a patient if he has not looked at the teeth; and, if the latter are in poor condition, the prescription is incomplete without a peremptory order to visit the dentist. It is not enough to say perfunctorily that the teeth should be looked after. If the patient asks "What dentist?" he may be recommended with reasonable safety to any nonadvertising man. The advertising dentist will spoil several sound teeth without compunction in order to place a costly bridge, with a sacrifice in the mechanical power of the jaw of over sixty per cent.

* * *

While astigmatism is not at the bottom of every chronic case that presents itself, the rectification of a few degrees of that error gives extraordinary comfort. The same is true of hypermetropia and especially of a combination of the two. No knowledge of optics is necessary to diagnosticate these conditions, the presence of which can be established by having the patient try to read through the ordinary oculist's test card and stating which set of lines he sees best on the astigmatic clock face. Each eye should be tested separately, but both should be open, the one not under test being covered with a card. Occasionally a patient will be found to be blind of one eye, much to his own astonishment.

* * *

Nose, throat, and ears all demand exploration before an accurate diagnosis is assured, and they should be examined exhaustively even if the skill required to treat the conditions found is lacking. If you send a patient to some rhinologists, you had better bid him good-bye, for you will not see him again as long as a fragment of bone remains in his nose.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of and deaths from cholera, plague, smallpox, and yellow fever were reported to the surgeon general of the United States Public Health and Marine Hospital Service for the week ending July 22, 1910:

Places.	Date.	Cases.	Deaths.
Cholera—Insular.			
Philippine Islands—Manila	May 22-28	1	1
Philippine Islands—Batangas	May 1-7	1	
Philippine Islands—Bulacau	May 1-28	36	24
Philippine Islands—Pampanga	Apr. 24-May 28	63	70
Philippine Islands—Pangasinan	Apr. 24-May 28	333	235
Philippine Islands—Tarlac	May 8-14	1	1
Philippine Islands—Union	May 1-28	2	1
Cholera—Foreign.			
China—Swatow	June 1-6		4
India—Bombay	June 8-14		1
India—Calcutta	May 22-28		40
India—Negapatam	May 7-15		11
India—Rangoon	May 29-June 4		2
Java—Batavia	May 29-June 4	5	3
Java—Samarang	May 22-June 4	95	80
Russia—Baku, government	May 29-June 18	10	6
Russia—Bessarabia	June 5-11	1	
Russia—Don, territory	May 29-June 18	1,298	432
Russia—Ekaterinislav, government	May 29-June 18	723	315
Russia—Kertsch	May 29-June 18	1	
Russia—Kharkov, government	May 29-June 18	154	83
Russia—Kherson, government	May 29-June 18	153	40
Russia—Kief, government	May 29-June 18	181	44
Russia—Kuban, government	May 29-June 18	168	85
Russia—Minsk, government	May 29-June 18	12	3
Russia—Mohilev, government	May 15-28	2	1
	May 29-June 18	13	3
Russia—Odessa	May 29-June 18	16	9
Russia—Orel, government	May 30-June 18	2	1
Russia—Poltava, government	May 29-June 18	111	29
Russia—Taurida, government	May 29-June 18	98	31
Russia—Tschernigov	May 29-June 18	134	61
Russia—Vitebsk, government	May 29-June 18	7	
Russia—Voroneg, government	May 29-June 18	1	
Siam—Bangkok	May 4-24	487	480
Straits Settlements—Singapore	May 22-28	13	11
Yellow Fever—Foreign.			
Brazil—Para	June 19-25	11	9
Costa Rica—San Juan	July 2-9	1	1
Sierra Leone—Freetown	June 1-8	1	1
Plague—Foreign.			
Brazil—Pernambuco	Apr. 1-15		1
China—Hongkong	May 22-June 4	3	2
China—Swatow	June 1-6		Present
India—Bombay	June 8-14		72
India—Calcutta	May 22-28		46
India—Kurrachee	June 5-11	51	48
India—Rangoon	May 29-June 4		41
Japan—Formosa	June 5-11	5	3
Japan—Osaka	May 1-31	5	5
Persia—Bouchir	Apr. 29-June 4	44	36
Rhodes—Aplakia	May 22-28		Present
Siam—Bangkok	Apr. 25-May 24	3	3
Straits Settlements—Singapore	May 22-28	1	1
Straits Settlements—Trinidad	July 14	1	1
Smallpox—United States.			
Alabama—Birmingham	July 4-10	4	
Alabama—Mobile	June 26-July 2	3	
Colorado—Alamosa County	Apr. 1-30		1

Places.	Date.	Cases.	Deaths.
Colorado—Las Animas County	Mar. 1-Apr. 30		2
Colorado—Logan County	May 1-31		1
Colorado—Montrose County	Apr. 1-30		1
District of Columbia	July 3-9	1	
Georgia—Columbus	July 3-9	6	
Georgia—Macon	Apr. 1-30	4	
Georgia—Macon	June 1-30	4	
Iowa	June 1-30	76	
Louisiana	June 1-30	109	
Minnesota—General	Mar. 1-31		1
Missouri—Kansas City	May 15-June 25	24	
Montana—Custer County	Apr. 1-30		1
Ohio	June 1-30	168	
New Jersey—Cumberland County	June 1-30	2	
Tennessee—Camden	July 1-7	2	
Tennessee—Nashville	July 3-9	1	
Texas—Fort Worth	June 1-30	10	
Utah	Mar. 1-31	112	

Smallpox—Foreign.

Abyssinia—Adis Ababa	May 16-28		Present
Brazil—Para	June 19-25	2	2
Brazil—Pernambuco	Mar. 16-Apr. 30		161
Canada—Halifax	June 26-July 2	2	
Canada—Sydney	July 3-9	10	
Chile—Chillan	May 14		Epidemic
Chile—Victoria	May 14		Present
China—Canton	May 22-28	5	
China—Chefoo	June 5-11		Present
China—Shanghai	June 6-12	1	3
China—Swatow	June 6		Present
Germany—General	June 19-25	1	
Gibraltar	June 20-July 3	2	
Great Britain—London	June 19-25	3	
India—Bombay	June 8-14		14
India—Madras	June 4-10		2
India—Rangoon	May 29-June 4		2
Italy—General	June 20-26	36	
Italy—Naples	June 20-26	5	1
Korea—Seoul	May 26-June 4	2	1
Mexico—Aguascalientes	June 26-July 9		4
Mexico—Guadalajara	June 26-July 2		2
Mexico—Mexico	June 5-11		1
Mexico—San Luis Potosi	June 19-25	1	1
Portugal—Lisbon	June 19-25	45	
Russia—Libau	June 20-26	22	2
Russia—Moscow	June 12-18	12	8
Russia—Riga	June 19-25	22	
Russia—St. Petersburg	June 12-18	35	12
Siberia—Vladivostok	May 22-28	1	
Spain—Barcelona	June 21-July 4		2
Spain—Valencia	June 19-25	3	
Straits Settlements—Singapore	May 22-28	8	2
Straits Settlements—Penang	May 29-June 4	1	
Turkey in Asia—Basra	June 5-11		Present

Public Health and Marine Hospital Service:

Official list of changes in the stations and duties of commissioned and other officers in the United States Public Health and Marine Hospital Service during the seven days ending July 20, 1910:

BIERMAN, C. H., Pharmacist. Granted seven days' leave of absence from July 18, 1910, under paragraph 210, Service Regulations.

FOSTER, M. H., Passed Assistant Surgeon. Upon return of Surgeon H. D. Geddings to Naples, Italy, relieved from duty at that station and directed to proceed to Ellis Island, N. Y., and report to the Chief Medical Officer for duty.

FRIEDMAN, H. M., Acting Assistant Surgeon. Granted twenty-eight days' leave of absence from August 1, 1910.

GARDNER, C. H., Surgeon. Granted one month's leave of absence from August 1, 1910.

GIBSON, L. P., Acting Assistant Surgeon. Granted seven days' leave of absence from July 18, 1910.

HAMILTON, H. J., Acting Assistant Surgeon. Granted four days' leave of absence from July 19, 1910.

HOUGHTON, M. W., Acting Assistant Surgeon. Granted seven days' leave of absence from July 23, 1910.

KORN, W. A., Passed Assistant Surgeon. Directed to proceed to Perth Amboy, N. J., upon special temporary duty.

LAGRANGE, J. V., Pharmacist. Granted twenty-three days' leave of absence from July 18, 1910.

MANNING, HERBERT M., Passed Assistant Surgeon. Granted one month's leave of absence from August 2, 1910.

ONUF, B., Acting Assistant Surgeon. Granted two days' extension of leave from July 6, 1910, on account of sickness.

PORTER, J. Y., Jr., Acting Assistant Surgeon. Granted one month's leave of absence from July 15, 1910, with pay, and from August 15, 1910, to November 30, 1910, without pay.

SCOTT, J. T., Acting Assistant Surgeon. Granted thirty days' extension of leave from May 4, 1910, on account of sickness.

SPANGLER, L. C., Pharmacist. Granted twenty-five days' leave of absence from August 5, 1910.

STATON, L. W., Acting Assistant Surgeon. Granted fourteen days' leave of absence from July 16, 1910.

STUART, A. F., Acting Assistant Surgeon. Leave of absence for thirty days from July 5, 1910, revoked.

WETMORE, W. O., Acting Assistant Surgeon. Granted nine days' extension of leave from June 29, 1910, on account of sickness.

WICKES, H. W., Passed Assistant Surgeon. Granted one month's leave of absence from July 15, 1910.

Appointments.

Dr. Warren F. Draper commissioned (recess) an assistant surgeon in the Public Health and Marine Hospital Service.

Dr. Julian M. Gillespie commissioned (recess) an assistant surgeon in the Public Health and Marine Hospital Service.

Dr. Richard A. Kearny commissioned (recess) an assistant surgeon in the Public Health and Marine Hospital Service.

Resignation.

Surgeon M. J. Rosenau, resignation accepted by the President to take effect June 30, 1910.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending July 23, 1910:

APPEL, A. H., Colonel, Medical Corps. Left Fort D. A. Russell, Wyo., en route to Camp E. S. Otis, Fort D. A. Russell, Target and Manœuvre Reservation, Wyo., for duty as chief surgeon.

AUSTIN, THOMAS C., Lieutenant, Medical Corps. Ordered to proceed from Army General Hospital, San Francisco, Cal., with one half of Co. B, Hospital Corps, to Leon Springs, Texas; upon completion of this duty to proceed to Atascadero, Cal.

BARNEY, FRED M., Lieutenant, Medical Reserve Corps. Left Fort Clark, Texas, for duty at Camp of Instruction, Leon Springs, Texas.

BEVANS, JAMES L., Captain, Medical Corps. Ordered to proceed from Army General Hospital, San Francisco, Cal., with one half of Co. B, Hospital Corps, to American Lake, Wash.; upon completion of this duty to proceed to Atascadero, Cal.

BRECHEMIN, LOUIS, Jr., Captain, Medical Corps. Granted thirty days' leave of absence.

CROSBY, WILLIAM D., Lieutenant Colonel, Medical Corps. Appointed a member of a board of review to meet in Washington, D. C., or the purpose of reviewing the proceedings and findings of medical examining boards in the cases of medical officers found to be disqualified for promotion for reasons other than physical disability contracted in line of duty.

CRUBBS, ROBERT B., Major, Medical Corps. Left Fort McIntosh, Texas, en route to manœuvre camp at Leon Springs, Texas.

CUTLIFFE, W. O., Lieutenant, Medical Reserve Corps. Left Fort McIntosh, Texas, with troops en route to manœuvre camp at Leon Springs, Texas.

DE VOE, RALPH G., Lieutenant, Medical Corps. Detailed to duty with troops, military tournament, Tacoma, Wash., from July 24 to 31, 1910.

DUNCAN, WILLIAM A., Captain, Medical Corps. Left Vancouver Barracks, Wash., for Camp of Instruction at American Lake, Wash.

EKWURZEL, GEORGE M., Major, Medical Corps. Left MacKenzie, Wyo., en route to Camp of Instruction, Fort D. A. Russell, Target and Manœuvre Reservations.

FISK, OWEN C., Lieutenant, Medical Corps. Ordered to proceed from Fort Creek, Neb., to Camp of Instruction at Fort Riley, Kan.

FORD, CLYDE S., Major, Medical Corps. Left Fort William H. Harrison, Mont., en route to American Lake, Wash.

HALLORAN, PAUL S., Captain, Medical Corps. Left Walter Reed General Hospital, Tacoma Park, D. C., on ten days' leave of absence.

Harthett, E. H., Major, Medical Corps. Assigned to duty as inspector instructor of Medical and Hospital Corps detachment, organized militia, State of Delaware, at Reheboth, Del., July 27 to 30, 1910.

Hathaway, Levy M., Captain, Medical Corps. Granted leave of absence for one month.

Haverkampf, C. W., Lieutenant, Medical Corps. Left Camp Dickinson, Chicago, en route to Camp Upton, Sparta, Wis.; reported arrival at Camp Emory Upton, Sparta, Wis.

Hess, Louis T., Major, Medical Corps. Assigned to duty as inspector instructor, Medical and Hospital Corps, 4th New Jersey Infantry, at Sea Girt, N. J., from August 1 to 6, 1910.

Hill, Felix R., Lieutenant, Medical Corps. Left Fort George Wright, Wash., en route to American Lake, Wash.

Holland, J. H., Lieutenant, Medical Reserve Corps. Left Fort Douglas, Utah, en route to Dale Creek, Wyo., with troops.

Hopwood, L. L., Captain, Medical Corps. Ordered to proceed from Army General Hospital, San Francisco, Cal., with one half of Co. B, Hospital Corps, to Leon Springs, Texas; upon completion of this duty to proceed to Atascadero, Cal.

Hughes, Leonard S., Lieutenant, Medical Reserve Corps. Reports arrival at Camp E. S. Otis, near Dale Creek, Wyo.

Hutton, Paul C., Major, Medical Corps. Left Fort Snelling, Minn., en route to Camp Upton, Sparta, Wis.

Kean, Jefferson R., Lieutenant Colonel, Medical Corps. Detailed to represent the Medical Department of the Army at the thirty-eighth annual meeting of the American Public Health Association, to be held at Milwaukee, Wis., September 5 to 9, 1910.

Kelly, John P., Lieutenant, Medical Reserve Corps. Granted two months' and twenty-eight days' leave of absence.

Kierulff, H. N., Lieutenant, Medical Reserve Corps. Left Fort Missoula, Mont., with the 14th Infantry en route to camp at American Lake, Wash.

La Garde, Louis L., Colonel, Medical Corps. Appointed a member of a board of review to meet in Washington, D. C., for the purpose of reviewing the proceedings and findings of medical examining boards in the cases of medical officers found to be disqualified for promotion for reasons other than physical disability contracted in line of duty.

McCaw, Walter D., Lieutenant Colonel, Medical Corps. Appointed a member of a board of review to meet in Washington, D. C., for the purpose of reviewing the proceedings and findings of medical examining boards in the cases of medical officers found to be disqualified for promotion for reasons other than physical disability contracted in line of duty.

McKnight, John R., Lieutenant, Medical Reserve Corps. Ordered to proceed from Plattsburg Barracks to Fort Ontario, N. Y., for temporary duty.

Manly, G. J., Major, Medical Corps. Left Fort Douglas, Utah, on detached service with the 15th Infantry, en route to Dale Creek, Wyo.

Marrow, C. E., Major, Medical Corps. Ordered to proceed from Fort Lawton, Wash., to the Camp of Instruction, American Lake, Wash., for duty.

Myers, William H., Lieutenant, Medical Reserve Corps. Reported arrival at Camp Gilchrist, Fla.; left Fort Screven, Ga., on July 17, 1910.

Pierson, Robert H., Captain, Medical Corps. Detailed to duty with troops, military tournament, Tacoma, Wash., from July 24 to 31, 1910.

Reasoner, M. A., Captain, Medical Corps. Granted leave of absence for one month and fifteen days.

Reynolds, Charles R., Major, Medical Corps. In addition to duties as instructor in Hospital Corps drill and first aid at the Army Medical School in Washington, D. C., detailed as instructor at that school in Medical Department administration, customs of the service, and duties of medical officers, Vice Lieutenant Colonel William H. Arthur, Medical Corps, hereby relieved.

Reynolds, Royal, Lieutenant, Medical Corps. Ordered to proceed from Army General Hospital, San Francisco, Cal., with one half of Co. B, Hospital Corps, to American Lake, Wash.; upon completion of this duty to proceed to Atascadero, Cal.

Russell, F. F., Major. Detailed to represent the Medical Department of the Army at the thirty-eighth annual meeting of the American Public Health Association, to be held at Milwaukee, Wis., September 5 to 9, 1910.

Stuckey, H. W., Lieutenant, Medical Reserve Corps. Relieved from duty at Fort Hamilton, N. Y., and ordered to Fort Greble, R. I., for duty.

Talbot, E. M., Captain, Medical Corps. Left Camp Dickinson, Chicago, en route to Camp Upton, Sparta, Wis.; reported arrival at Camp Emory Upton, Sparta, Wis.

Tefft, William H., Captain, Medical Corps. Granted leave of absence for one month and ten days.

Truby, Williard F., Major, Medical Corps. Ordered to proceed from Fort Worden, Wash., to Camp of Instruction, American Lake, Wash.

Weed, Frank W., Captain, Medical Corps. Assigned to duty as inspector instructor, Medical and Hospital Corps, 4th New Jersey Infantry, at Sea Girt, N. J., from August 1 to 6, 1910.

Wertenbaker, C. I., Lieutenant, Medical Reserve Corps. Granted thirty days' leave of absence.

Winn, Robert N., Major, Medical Corps. Granted three months' and twenty-one days' leave of absence, to take effect about October 1, 1910.

Woodson, Thomas D., Lieutenant, Medical Corps. Left Vancouver Barracks, Wash., for Camp of Instruction at American Lake, Wash.

Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending July 23, 1910:

Diehl, O., Medical Inspector. Detached as fleet surgeon, U. S. S. *Charleston*, Asiatic Fleet, and ordered home.

Reed, E. U., Passed Assistant Surgeon. Detached from duty at the Naval Hospital, Norfolk, Va., and ordered to duty on board the U. S. S. *Philadelphia*.

Births, Marriages, and Deaths.

Married.

Ansbacher—Newman.—In Jersey City, N. J., on Tuesday, July 19th, Dr. Samuel L. Ansbacher, of New York, and Miss Anita Newman.

Kerr—Weir.—In Philadelphia, on Tuesday, July 12th, Dr. Clinton Stewart Kerr, of Emlenton, and Miss Mary Jane Weir.

Toulon—Goodier.—In Manila, P. I., on Saturday, June 11th, Assistant Surgeon Alfred Joseph Toulon, United States Navy, and Miss Mabel Estelle Goodier.

Died.

Albers.—In Thiensville, Wisconsin, on Friday, July 15th, Miss Emily Albers, daughter of Dr. H. A. Albers, aged twenty-two years.

Bartlett.—In Chicago, on Monday, July 18th, Dr. John Bartlett, aged eighty-one years.

Borey.—In New Orleans, on Thursday, July 14th, Dr. A. H. Borey, aged twenty-six years.

Brown.—In Elizabeth, N. J., on Monday, July 18th, Dr. Louis R. Brown, aged seventy years.

Cammack.—In Milford, Indiana, on Saturday, July 9th, Dr. Thomas Cammack, aged ninety years.

Early.—In Granite City, Illinois, on Tuesday, July 12th, Dr. Henry C. Early, aged thirty-five years.

Forrester.—In Philadelphia, on Tuesday, July 19th, Dr. William L. C. Forrester, aged forty-nine years.

Garlock.—In Hilton, N. Y., on Sunday, July 17th, Dr. Charles M. Garlock, of New York, aged fifty-nine years.

Howard.—In Floyd, Virginia, on Saturday, July 16th, Dr. T. Henry Howard.

Leavy.—In Albany, N. Y., on Tuesday, July 19th, Dr. Mark S. Leavy.

Stone.—St. Paul, Minnesota, on Saturday, July 16th, Dr. Alexander J. Stone.

Terrill.—In Indianapolis, Indiana, on Wednesday, July 6th, Dr. Luther B. Terrill, of Anderson, aged fifty-six years.

New York Medical Journal

INCORPORATING THE

Philadelphia Medical Journal and The Medical News

A Weekly Review of Medicine, Established 1843.

VOL. XCII, No. 6. NEW YORK, AUGUST 6, 1910. WHOLE No. 1653.

Original Communications.

MEDICAL ALLUSIONS IN HUDIBRAS AND BUTLER'S REMAINS.

BY FIELDING H. GARRISON, M. D.,
Washington, D. C.,
Assistant Librarian, Surgeon General's Office, U. S. Army.

Samuel Butler, the son of a Worcestershire farmer, was a striking example of the fact that a "decayed gentleman" is often a man educated out of his class. Of his actual schooling we know nothing beyond the fact of his undisputed scholarship, but his real education for life consisted in residences in various capacities at the houses of people of rank and station above his own. First, a page to a countess, he wound up his career as secretary to Lord Carbury and steward at Ludlow Castle, where the court met, which post he eventually resigned to marry for money. Circumstances like these had undoubtedly a great deal to do with the development of an innate satiric or sardonic disposition and the composition of the "immense lampoon" which gives Butler his name and fame in literature. For if the professed object of *Hudibras* was to ridicule the meddlesome pragmatism, the churlish hypocrisy and ungraciousness of Cromwellian Puritanism, its appearance (in 1663), four years after Cromwell's death, two years after the Restoration, was somewhat late in the day; and with all respect for Butler's satiric genius one leading motive that can be assigned for its publication, when the author was turned fifty, would seem to be a certain desire to please the great and to gain preferment and emolument thereby.[1]

Praise of *Hudibras* is one of the commonplaces of literary criticism. Who can say anything new of a poem of which a great critic once claimed that "more than half the lines are got by heart" or of a writer who has been described as "a whole species of poets in one." Fatally dull as some of Butler's facile octosyllables may seem to us now, the best specimens of his satire are still keenly alive and intensely modern. Even the doggerel corduroy metre he employed, "framed so as to be the very voice of mocking laughter," and the rhymes "which seem to chuckle and sneer of themselves," still help out the fame which his critics assign him—as the supreme "artist in burlesque."

Medical interest in Butler centres in his remarkable learning and the quaint way in which he employs it to ridicule quackery, humbuggery, and superstition. At this time of day it is difficult to say whether he was a sciolist or a grind, but it is certain that he had a unique power of assimilating some of the best knowledge of his time and employing it for his especial purpose in the lightest and most adroit manner. His Parthian arrows are of the kind described by Sainte Beuve—*des flèches acerrées qui arrivent brusquement et sifflent encore*—and such fine sarcasm and raillery were not reserved entirely for the Presbyterian elders and committeemen:

> "Grave synod men that were revered
> For solid face and depth of beard,"

but the student of medical curiosities may be amused at such things as his gibe at the solemn nonsense of Roman soothsaying:

> "the roguery
> Of old aruspicy and augury,
> That out of garbages of cattle
> Presaged the events of truce or battle;
> From flights of birds, or chickens pecking
> Success of greatest attempts would reckon,"

his impish mockery at Paracelsus, spiritualist Kelly, and Cornelius Agrippa:

> "Bombastus kept a devil's bird
> Shut in the pommel of his sword,
> That taught him all the cunning pranks
> Of past and future mountebanks.
> Kelly did all his feats upon
> That devil's looking glass, a stone;
> Where playing with him at bo-peep,
> He solved all problems ne'er so deep.
> Agrippa kept a Stygian pug
> I' the garb and habit of a dog,
> That was his tutor, and the cur
> Read to th' occult philosopher,
> And taught him subtly to maintain
> All other sciences are vain,"

or the arch way in which Hudibras assures the Lady that his capacity for keeping a secret is equal to that of the author of *De secretis mulierum:*

> "But if you doubt I should reveal
> What you intrust me under seal,
> I'll prove myself as close and virtuous
> As your own secretary Albertus."

The first medical reference of consequence that we encounter in *Hudibras* is the familiar passage

[1] If there be any doubt of this, witness the only lines in which Butler has "spoken out," in the sense of leaving a personal record of his feelings:

> "May he be damned who first found out that curse,
> To imprison and confine his thoughts in verse;
> To hang so dull a clog upon his wit,
> And make his reason to his rhyme submit.
> Without this plague, I freely might have spent
> My happy days with leisure and content,
> Had past my time as pleasantly away,
> Slept all the night, and loitered all the day," etc.

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about the Taliacotian operation (plastic reformation of the nose):

"So learned Taliacotius from
The brawny part of porter's bum,
Cut supplemental noses, which
Would last as long as parent breech;
But when the date of Nock was out,
Off dropped the sympathetic snout"—

which speaks for itself. We may note, in passing, the current belief in a sympathetic relation between parts of bodies separated in space, as in Sir Kenelm Digby's scorpion oil (opotherapy) and weapon salve (psychotherapy):

"A scorpion's oil is said
To cure the wounds the vermin made;
And weapons dressed with salve restore
And heal the hurts they gave before";

not to mention the

"Strange hermetic powder
That wounds nine miles point blank would solder,
By skilful chemist with great cost
Extracted from a rotten post."

Let us pass from these to the witty portrait of the empiric Ralph who went in for "judicial astrology"—

"A deep occult philosopher,
As learned as the wild Irish are,
Or Sir Agrippa, for profound
And solid lying much renowned:
He Anthroposophus and Flood
And Jacob Behmen understood:
Knew many an amulet and charm
That would do neither good nor harm.
. . . . . .
He understood the speech of birds
As well as they themselves do words:
Could tell what subtlest parrots mean
That speak and think contrary clean:
What member 'tis of whom they talk
When they cry *Rope!* and *Walk, knave, walk!*
. . . . . .
Find in the physiognomies
O' the planets all men's destinies:
Like them that took the Doctor's bill,
And swallowed it instead o' the pill.
They'll feel the pulses of the stars
To find out agues, coughs, catarrhs;
And tell what crisis does divine
The rot in sheep or mange in swine."

As a companion piece or pendant to this portrait there is another which has something of the homely, countrybred flavor of Jenner's *Signs of Rain*—the sketch of Sidrophel, the Rosicrucian and veterinarian:

"To whom all people, far and near,
On deep importances repair;
When brass or pewter hap to stray,
And linen slinks out of the way;
When geese and pullen are seduced,
And sows and suckling pigs are chowsed;
When cattle feel indisposition
And need th' opinion of physician;
When murrain reigns in hogs or sheep,
And chicken languish of the pip;
When yeast and outward means do fail,
And have no power to work on ale,
When butter does refuse to come,
And love proves cross and humorsome:
To him with questions and with urine,
They for discovery flock, or curing."

Sidrophel, it seems, had his own peculiar psychotherapy that could

"Cure warts and corns with application
Of medicines to th' imagination;
Fright agues into dogs and scare
With rhymes the toothache and catarrh."

Then he knew how to

"Kill pigs and geese with powdered glass,
And make it for enchantment pass;
With cow itch meazle like a leper,
And choke with fumes of Guinea pepper;
Make lechers and their punks with dewtry [*Datura-stramonium!*]
Commit fantastical advowtry."

A contemporary of the Hooks and Leeuwenhoeks, he was an expert in parasitology, knowing

"How many different specieses
Of maggots breed in rotten cheeses;
And which are next of kin to those
Engendered in a chandler's nose;
Or those not seen but understood,
That live in vinegar or wood,"

And he was a forerunner of the vegetable pathologist, having

"Several new found remedies
Of curing wounds and scabs in trees,
Your arts of fluxing them for claps
And purging their infected saps;
Recovering chancres, crystallines
And nodes and blotches in the rinds."

Last but not least he knew the secret of the homunculus:

"What medicine 'twas that Paracelsus
Could make a man with as he tells us."

It will be gathered from such excerpts as these that Butler entertained about the same opinion of the medical profession as he did of the clergy or the luminaries of the law. His writings are, in fact, replete with *le mal qu'on dit des médecins*, and although, in one place he says, in paraphrase of Homer,

"A skillful leech is better far
Than half a hundred men of war,"

yet he refers elsewhere to

"A learned physician and manslayer,"

and his sketch of Talgol doubtless embodies his real view:

"Nor engine nor device polemic,
Disease nor doctor epidemic,
Though stored with deletery medicines,
Which whosoever took is dead since,
E'er sent so vast a colony
To both the underworlds as he."

Butler was, in fact, the typical scoffer, and by dint

of continual raillery, came at last to see everything in a whimsical or sardonic light, especially those enthusiasms, religious, scientific, or other, which the Germans call *Schwärmerei*—

"A convert's but a fly that turns about
After his head's pulled off to find it out."

Thus, to indicate that attention to sanitary matters may sometimes lead to high worldly place, he instances the example of the Emperor Vespasian,

"Who from a scavenger did come
To be a mighty prince in Rome."

And Semiramis is held to be of interest as a pioneer of castration and ovariotomy:

"This first a woman did invent
In envy of man's ornament,
Semiramis of Babylon
Who first of all cut men o' the stone
To mar their beards and lay foundation
Of sow geldering operation."

It is in the *Remains in Verse and Prose*, published long after his death, in 1759, that we find a different Butler from the whimsical, incredulous mocker who was the author of *Hudibras*. Here age and the sour experience of hope deferred have wrought upon him to the extent that his view of life, if only pessimistic, is at least deeper, graver, and not without a curious interest of its own. The novelist Flaubert, one of his critics tells us, "wished us to see the external world flowing like water before our eyes as Brahma sees it," and this philosophical equipoise or indifferentism, to which so many modern writers have pantingly aspired, Butler seems to have attained without any apparent effort, indeed perhaps in spite of his better self. If he ever had any capacity for moral indignation or other human emotion, he had completely lost it and ultimately came to live in that region which the German philosopher holds out as a goal of effort, "on the other side of good and evil." In the *Miscellaneous Thoughts* his most serious and important poems, the forms of good and evil pass before his eyes like figures on an arras, having no moral, but only an artistic or satiric interest,[2] and his verses on Women, Love, Fate, Justice, and so forth, have the familiar pessimistic ring of your seventeenth century Schopenhauer.

Among the poems of scientific interest in the *Remains* is The Elephant in the Moon, a satire on the Royal Society, which, if dull and lengthy, is at least well aimed at one of the principal faults of the seventeenth century men—the *omne ignotum pro miraculo:*

"Learned men who greedily pursue
Things that are rather wonderful than true,
And, in their nicest speculations, choose
To make their own discoveries strange news,
And natural history rather a gazette
Of rarities, stupendous and far set:
Believe no truths are worthy to be known
That are not strongly vast and overgrown."

Another characteristic foible of the sixteenth and seventeenth centuries, the quest for a universal remedy, is well hit off in Butler's lines referring to a certain French quack who, going beyond Paracelsus,

"set up physic
And called his receipt a general specific."

This type of quack, not far to seek to-day, had evidently a larger contract on his hands than La Place, who sought a "world-formula" to express mathematically how anything or everything happens.

Butler's *Prose Remains* consist mainly of a gallery of "Characters," following the mechanical lines laid down by Theophrastus and La Bruyère, and having the same fault as their portraitures—the tendency to delineate diagrammatic types rather than flesh and blood human beings. Of these, the Astrologer and Hermetic Philosopher are largely prose transcripts of the passages already quoted from *Hudibras*. A few lines from the Medicine Taker may be of interest, as a vigorous sketch of the *malade imaginaire*, who needs judicious psychotherapy rather than exhibition of quack medicines. "His disease is only in his judgment, which makes him believe a doctor can fetch it out of his stomach or his belly; and fright those worms out of his guts that are bred in his brain . . . He is no sooner well, but any story or lie of a new famous doctor, or strange cure, puts him into a relapse and he falls sick of a medicine instead of a disease, and catches physic like him that fell into a looseness at the sight of a purge. He never knows when he is well nor sick, but is always tampering with his health till he has spoiled it, like a foolish musician that breaks his strings with striving to put them in tune." To this we are tempted to add a few palpable hits from the character of the Mountebank or strolling vendor of quack medicines—on the whole the liveliest of Butler's medical satires in prose: "He is a pedlar of medicines, a petty chapman of cures, and tinker empirical to the body of man. He strolls about to market and fairs; where he mounts on the top of his shop, that is his bank, and publishes his medicines as universal as himself; for everything is for all diseases, as himself is of all places, that is to say, of none. His business is to shew tricks and impudence; as for the cure of diseases it concerns those that have them, not him, farther than to get their money. . . . He baits his patient's body with his medicines, as a rat-catcher does a room, and either poisons the disease or him. As soon as he has got all the money and spent all the credit the rabble could spare him, he then removes to fresh quarters, where he is less known and better trusted. . . . He administers physic with a farce, and gives his patients a preparative of dancing on the rope, to stir the humors and prepare them for evacuation. . . . The first thing he vents is his own praise, and then his medicines wrapt up in several papers and lies. . . . He casts the nativity of urinals, and tries disease, like

[2] Of this tendency one instance may suffice, where, sounding the brazen note of Nietzsche's "immoralist," he ridicules Ulysses as an oaf in his relation to what Kipling has called "the most ancient profession in the world."

"To be out of countenance and, like an ass,
Not pledge the Lady Circe one beer glass;
Unmannerly refuse her treat and wine,
For fear of being turned into a swine;
When one of our heroic adventurers now
Would drink her down and turn her to a sow."

a witch, by water. . . . He pretends to universal medicines, that is such, as, when all men are sick together, will cure them all, but till then no one in particular."

Our excerpts from the *Prose Remains* may close with a paragraph from the satire "On Dr. Charlton's Feeling a Dog's Pulse at Gresham College," one of Butler's many slaps at the scientific or experimental tendencies of seventeenth century medicine, which was incidentally "a satirical sneering imitation" of the literary style of the then secretary of the Royal Society, Robert Boyle. "It is wonderful," says our satirist, "to behold this exquisite and solert Doctor, whose province lies in the cabinet of fair ladies, and whose daily employments are to solicit the tender arteries of their ivory wrists, that he, I say, should nevertheless condescend to animadvert the languishing diastole of an expiring mongrel."

The studious neglect which Butler suffered at the hands of the king and the nobles of the court—Clarendon, Dorset, Buckingham—became a sort of *scandalum magnatum* after his death, although it was doubtless exaggerated. Some say that he was well taken care of, others that he lived and died an obscure literary hack. He himself boasts how Charles II. was so infatuated with his poem that

> "He never eat nor drank nor slept
> But *Hudibras* still near him kept;
> Never would go to church or so,
> But *Hudibras* must with him go."

But our poet-jester lived to learn what a Barmecide's feast mere literary fame and royal notice of the cap and bells may be if unaccompanied by any material emolument—

> "For this good king it seems was told
> By some that with him were too bold—
> If e'er you hope to gain your ends,
> Caress your foes and trust your friends."

On the other hand, Aubrey tells us that, for an office seeker, Butler was uppish and hard to please. "He might have had preferments at first, but would not accept any but very good, and so got none." Then he had, from childhood up, the sneering fault finding tendency which is the drawback of the satirical temperament; and men were not apt to cultivate the society of one who might at any moment turn the shafts of his sarcasm against them. Of all this much is in dispute, although the truth is doubtless summed up in Samuel Wesley's well known lines in Westminster Abbey:

"While Butler, needy wretch, was yet alive,
No generous patron would a dinner give:
See him when starved to death and turned to dust,
Presented with a monumental bust:
The poet's fate is here in emblem shown,
He asked for bread and he received a stone."

Strange that the keenest satirist of his age should have fooled himself by chancing all upon the favor of the most frivolous and deceitful of royal patrons. Yet if Butler expected the king to be grateful for *Hudibras* he was blind to the crux of the whole matter—the truth about himself. Gratitude is proverbially a burden, and people do not commonly love those who do things for them, but only those whom they instinctively do things for. Butler had many commendable traits of forthright, honesty, and downright truthfulness, but we can read the story of his life in the hard face we see in his portraits—high nose, large keen sighted eyes, well hung chin, smug satiric mouth—a strong sardonic "morning-after" face, flushed with the glow of robust health, yet with just those traits of snobbery and self seeking that can make or mar a certain ignoble type of character.

A STUDY OF THE LEUCOCYTES IN PULMONARY TUBERCULOSIS.*

A Preliminary Investigation.

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The present investigation was undertaken to determine whether the leucocytes in cases of pulmonary tuberculosis in a sanatorium a little above sea level present a constant picture in the various stages of the disease and in accordance with the improvement or retrogression of the patient. We desired to see what are the average proportions of the different white blood cells in phthisis, before taking up some further studies on the effect upon the blood picture of various factors, both physiological and medicinal.

The examinations were made from the blood of the patients in the service of one of us at the Philadelphia Jewish Sanatorium for Consumptives at Eagleville, Pa., situated 600 feet above sea level.

THE LEUCOCYTES AS A WHOLE.

Chart I.—Total number of leucocytes.

	Stage I.[1]	Stage II.	Stage III.	Improving cases.	Stationary cases.	Advancing cases.
Number of cases	0	5	2	1	3	3
Average number of leucocytes. .		7,840	9,400	10,000	6,477	9,533

The leucocytic count as a whole in the cases examined varied little from the normal, and was in accordance with no definite rule. The average number in cases progressing unfavorably was greater than that in stationary cases. An improving patient had a leucocytic count of 10,000.

Webb and William (1) found no increase in the white blood cells in Colorado. Holmes (2), who also worked in Colorado, found no leucocytosis in the pretuberculous stage, a very little in the early incipient stage, and slight leucocytosis in the ad-

*Read before the Pathological and Bacteriological Section at the Sixth Annual Meeting of the National Association for the Study and Prevention of Tuberculosis at Washington, May 2 and 3, 1910.

[1]The classification of the National Association for the Study and Prevention of Tuberculosis has been used.

Stage I.—Slight initial lesion in the form of infiltration limited to the apex of a small part of one lobe. No tuberculous complications. Slight or no constitutional symptoms. Slight or no elevation of temperature or acceleration of pulse at any time during the twenty-four hours, especially after rest. Expectoration usually small in amount or absent.

Stage II.—No marked impairment of function, either local or constitutional. Localized consolidation moderate in extent, with little or no evidence of destruction of tissue or disseminated fibroid deposits. No serious complications.

Stage III.—Marked impairment of function, local and constitutional. Localized consolidation intense; or disseminated areas of softening; or serious complications.

vanced stage of the disease. Craig's (8) results, obtained in the congested district of Philadelphia, agree with those of Holmes.

THE POLYMORPHONUCLEAR NEUTROPHILES.

Chart II.—Percentage of polymorphonuclear neutrophiles.

	Stage I.	Stage II.	Stage III.	Improving cases.	Stationary cases.	Advancing cases.
Number of cases.....	2	5	5	3	4	5
Number of observations	4	7	11	5	6	11
Average percentage...	57	60.8	65.4	59	65	63

The average percentage of polynuclear neutrophiles was fifty-nine in improving cases, sixty-five in stationary cases, and sixty-three in cases progressing unfavorably. There were many variations from this, however. One improving patient had seventy per cent. one month and forty-eight per cent. the next. The average percentage in the first stage of the disease was fifty-seven, in the second stage, sixty-one, and in the third stage, sixty-five and a half per cent.

Holmes, in Colorado, Hultgen (4), in Chicago, and Swan (5) and Craig, in Philadelphia, found corresponding differences in the three stages, those of Swan being the most marked. Webb and Williams found the polynuclear cells in normal persons and in cured cases of tuberculosis less at Colorado Springs than at sea level, they being slightly greater in cured than in normal cases. They were very little below the sea level normal in improving cases at Colorado Springs, somewhat above it in stationary cases, and considerably above it in cases progressing unfavorably.

Our few cases of leucocytosis were not always associated with an increase in the proportion of polymorphonuclear cells, two cases with 9,800 and 10,000 leucocytes respectively having only sixty-two per cent. of neutrophiles.

This does not bear out the statements of Cabot (6), Ewing (7), and Swan (5), who believe leucocytosis in tuberculosis to be due to an increase in the polynuclear elements.

ARNETH'S CLASSIFICATION.

Chart III.—Percentages of neutrophiles according to Arneth's classification.

	Stage I.	Stage II.	Stage III.	Improving cases.	Stationary cases.	Advancing cases.
Number of cases.....	2	5	5	3	4	5
Number of observations	4	7	11	5	6	11
Percentage of cells with						
1 nucleus	6.5	4.5	5.5	6	5	5
2 nuclei	32.5	33.5	29.5	30	29	31.5
3 nuclei	47.5	50.5	46.5	50.5	46.5	48.5
4 nuclei	11.5	10	16	11	17.5	13
5 nuclei	2	1.5	2.5	2.5	2	2
Percentage of cells with						
1 or 2 nuclei.....	37	38	35	35.5	37.75	36.7
3 or more nuclei...	63	62	65	64.5	62.25	63.3

The polymorphonuclear cells were divided into five groups in accordance with the number of nuclei they contained, as suggested by Arneth. In a number of cases Arneth's subdivision of each class according to the configuration of the nuclei was followed; but this was later abandoned, as the number of cells in each subdivision was too small to be of value unless 500 or 1,000 neutrophiles were counted.

The cells containing one and two nuclei averaged between thirty-five and thirty-eight per cent. in improving and stationary and advancing cases, and in the first, second, and third stages of the disease. Some individual cases varied from this general average. In two out of the three improving cases there was an increase in cells having three or more nuclei. Of the four stationary cases one exhibited this same tendency and one showed an increase in the cells containing one and two nuclei. Of the cases progressing unfavorably only two showed an increase in the cells containing one or two nuclei; while two showed a marked decrease in these cells.

Our results are thus at variance with the work of Dluski and Rotzsedihowski (8), who found in the blood of normal individuals from forty to fifty-five per cent. of cells containing one and two nuclei, in improving patients from forty-one to fifty-four per cent., in patients getting slightly worse, from fifty-eight to sixty-eight per cent., and in patients progressing very unfavorably from seventy-five to ninety-two per cent. The normal count as given by Arneth is five per cent. of cells containing one nucleus, thirty-five per cent. of those containing two nuclei, and forty-one per cent., seventeen per cent., and two per cent. respectively of cells containing three, four, and five nuclei.

Our patients may therefore be said to have had a diminished percentage of neutrophiles containing two and four nuclei and an increased percentage of cells containing three nuclei.

MONONUCLEAR BASOPHILES.

Chart IV.—Proportion of mononuclear basophiles.

	Stage I.	Stage II.	Stage III.	Improving cases.	Stationary cases.	Advancing cases.
Number of cases.....	2	5	5	3	4	5
Number of observations	4	7	11	5	6	11
Average percentage...	34	33.5	29	34	29.5	31

We have classified basophilic mononuclear cells into 1, lymphocytes, small and large; and, 2, large mononuclear and transitional cells. While we have used this conventional classification, we feel that the small lymphocytes constitute a group apart by themselves. Although in most cases we have included in the same group the large mononuclear and the transitional cells, we do not feel at all certain that they rightly belong to the same class.

Cabot thinks it best at the present time to include the so called large mononuclear cells for practical purposes within the lymphocytic group, as no clinical importance has ever been attached to them and as they make up in the great majority of cases but a few per cent. of all the leucocytes. Da Costa (9) finds it convenient for practical purposes to classify together the large forms of the true lymphocytes and the large mononuclear leucocytes, since he believes it impractical to differentiate one from the other in specimens prepared for ordinary clinical examination.

LYMPHOCYTES.

Chart V.—Percentage of lymphocytes.

	Stage I.	Stage II.	Stage III.	Improving cases.	Stationary cases.	Advancing cases.
Number of cases.....	2	5	5	3	4	5
Number of observations	4	7	11	5	6	11
Average percentage...	34	33.5	28.5	34	29.5	31

The total number of lymphocytes in the first and second stages of tuberculosis averaged about thirty-four per cent. The lymphocytes are therefore increased in the incipient and moderately advanced cases, being less, though still high, in the far advanced cases.

Patients that were improving had an average of thirty-four per cent. lymphocytes; those whose condition was stationary had on the average twenty-

nine and a half per cent., while those progressing unfavorably averaged thirty-one per cent. The lymphocytic count was therefore highest in the improving and lowest in the stationary cases.

An increase in lymphocytes in incipient tuberculosis has been noted by Craig and Hultgen, the latter regarding it as essential to a diagnosis of incipient tuberculosis. Cabot, however, states that this comparatively large proportion of lymphocytes is not peculiar to tuberculosis but occurs in a variety of debilitated conditions. Holmes, on the other hand, found a slightly decreased percentage of young cells in the pretubercular stage and a moderate decrease in early incipiency.

In view of a statement of Cabot's that an increased percentage of large and small lymphocytes may be found when the leucocytic count is normal and that when leucocytosis is present we find ordinarily a marked increase in the percentage of polymorphonuclear cells at the expense of the lymphocytes, which latter statement Swan supports, it is interesting to note that a slight degree of leucocytosis in one of our incipient cases and also in a moderately advanced case was associated with a high lymphocytic count.

Craig states that the lymphocytes and large mononuclears show a high percentage in Stage I, the percentage being lower in Stage II, and lowest in Stage III. According to his figures the decrease from the first to the second stage is eight among the lymphocytes and 1.7 among the large mononuclears. It is evident, however, that by the terms "lymphocytes," "large mononuclears," and "transitionals" he must designate other cells than those to which these terms are ordinarily applied, as his proportions of these cells differ radically from those of all other observers, he having eight per cent. of transitionals.

Webb and Williams found the proportion of mononuclear cells in normal adults much higher in Colorado Springs than at sea level. The proportion was a little less in their cured cases of tuberculosis, still lower in improving cases, though slightly above the sea level normal. The proportion was still lower in stationary cases, and lowest of all in cases progressing unfavorably, being ten less than the normal at sea level. The decrease was as marked in the small lymphocytes as in the large lymphocytes, large mononuclear cells, and transitionals, which these authors group together.

Chart VI.—Comparative percentages of mononuclear cells at Eagleville and at Colorado Springs.

Percentage in normal cases.		Percentage in improving cases.	Percentage in stationary cases.	Percentage in advancing cases.
Sea level..... 37.4	Eagleville	34	29.5	31
Colorado Springs 43.6	Colorado Springs	38.5	34.4	27.5

Holmes also noted a marked relative decrease in the percentage of young cells in the advanced stage of the disease. He states that as the tuberculous condition becomes more marked and convalescence increases, the percentage of lymphocytes increases.

LARGE MONONUCLEAR AND TRANSITIONAL CELLS.

Chart VII.—Percentages of large mononuclear and transitional cells, grouped together.

	Stage I.	Stage II.	Stage III.	Improving cases.	Stationary cases.	Advancing cases.
Number of cases.....	2	5	5	3	4	5
Number of observations	4	7	11	5	6	11
Average percentage...	6	4.5	5.5	6	4.5	5.5

Grouping together the large mononuclear and the transitional cells, we obtained an average of 6 per cent. in Stage I, 4.5 per cent. in Stage II, and 5.5 per cent. in Stage III. These cells are apparently most numerous in the first stage and least in the second.

Among improving cases the average of these cells was 6 per cent., among stationary cases 4.5 per cent., and among retrograding cases 5.5 per cent.—highest in the improving and lowest in the stationary cases. We have been unable to find in the hands of other writers any separate record of these cells with which to compare our figures.

In a few cases we counted separately the large mononuclear cells and the transitionals, with opposite results.

Chart VIII.—Percentage of large mononuclear and of transitional cells, grouped separately.

	Stage I.		Stage II.		Stage III.		Improving cases.		Stationary cases.		Advancing cases.	
	Large mononuclears.	Transitionals.	Large mononuclears.	Transitionals.	Large mononuclears.	Transitionals.	Large mononuclears.	Transitionals.	Large mononuclears.	Transitionals.	Large mononuclears.	Transitionals.
Number of cases.....	1	1	3	3	1	1	1	1	2	2	2	2
Number of observations	1	1	3	3	1	1	1	1	2	2	2	2
Average percentage...	2	3	3	2	2.7	2.3	2	3	4	2	2	2

The transitionals showed the largest percentage in the first stage and in improving cases and the lowest in the second stage and in stationary cases, but the large mononuclears showed the reverse. The large mononuclears averaged 2, 3, and 2 per cent. in the first, second, and third stages, respectively, and 2, 4, and 2 per cent. in improving, stationary, and retrograding cases, respectively. The transitionals, on the contrary, averaged 3, 2, and 2.3 per cent. in the first, second, and third stages, respectively, and 3, 2, and 2 per cent. in improving, stationary, and retrograding cases.

Craig's figures show the smallest percentage of transitionals also in the second stage (6.4 per cent.) but the largest was in the third stage (8.6 per cent.)

POLYNUCLEAR BASOPHILES.

In examining our blood preparations we noticed several basophilic cells with multiple nuclei. As a rule we skipped them without recording their presence. Several times we included them with the polymorphonuclear neutrophiles, thinking that they belonged to that group, but had failed to take the stain well. The study of several fields, however, in which these new cells and true polymorphonuclear neutrophiles lay side by side convinced us that they belonged to different types of cells. One we classed with the transitional cells. We tend to the opinion that they belong to the same group as the transitional cells. The structure of the cell protoplasm and of the nuclei in the one closely resemble that of the other. We, moreover, observed in one field two cells, one a typical transitional, the other a similar cell having a crescentic nucleus divided in half, with a very narrow space between the two segments. The nucleus in the polynuclear basophyle is comparatively large in size and is of even configuration and staining qualities. As many as three nuclei have been observed in one cell.

superimposed one above the other. In our future work we shall group these cells separately.

EOSINOPHILES.

Chart IX.—Percentages of eosinophiles.

	Stage I.	Stage II.	Stage III.	Improving cases.	Stationary cases.	Advancing cases.
Number of cases.....	2	5	5	3	4	5
Number of observations	4	7	11	5	6	11
Average percentages...	1.5	0.75	1.3	1.2	1.2	1.1

The average percentages of eosinophiles in our cases in the first, second, and third stages were 1.5, 0.75, and 1.3 respectively. The first stage, however, represents but four counts, two of which had none and one had four per cent. Of six counts in the second stage three had none and one had 0.5 per cent. There was only one zero among nine counts in the third stage.

The improving and the stationary cases averaged 1.2 per cent., while those progressing unfavorably averaged 1.125 per cent.

Craig's figures differ from ours in that the greatest percentage of eosinophiles (3.4) occurs in the second stage, while the lowest (1.8) is in the third stage.

Webb and Williams found the largest percentage of eosinophiles in the cured cases of tuberculosis, the next lowest in order being normal cases, improving cases, stationary cases, and advancing cases. Swan in his earlier work as well as in that with Karsner (10) found an increase in eosinophiles to accompany improvement under treatment. Their absence he considered an unfavorable prognostic sign.

CONCLUSIONS.

It is of course impossible to draw any definite conclusions from so few observations as have been presented in this paper. Some of the results in our cases are nevertheless suggestive:

1. The percentage of polymorphonuclear neutrophiles was diminished in incipient and moderately advanced cases, being less in the former. It was also diminished in cases that were improving.

2. The percentages of the different forms of polymorphonuclear neutrophiles, classified according to the number of nuclei they contained, bore no constant relation to any stage or to the progress of the disease.

3. The percentage of lymphocytes was increased in incipient and moderately advanced and in improving cases.

4. The percentage of large mononuclear and transitional cells, grouped together, while within normal limits, was greatest in incipient and in improving cases.

5. The percentage of eosinophiles was greatest, though normal, in incipient cases.

6. In moderately advanced cases were found the lowest percentage of large mononuclear and transitional cells, grouped together, and of eosinophiles, and the highest percentage of large mononuclear cells.

7. In patients whose condition was stationary occurred the highest percentage of polymorphonuclear neutrophiles, and the lowest percentage of lymphocytes, of large mononuclear cells, and of large mononuclear and transitional cells grouped together.

8. Whenever one extreme was exhibited by moderately advanced cases (as in 6) or by stationary cases (as in 7) the other extreme was furnished respectively by incipient cases or by improving cases. Far advanced and retrograding cases respectively held a middle position, which approached the condition found in incipient and in improving cases respectively, rather than the other extreme.

9. In addition to the mononuclear basophilic cells, the blood occasionally contains polynuclear basophilic cells, easily distinguishable from other leucocytes.

IMPROVING CASES.

No.	Stage.	Date.	Total count.	Percentage of: P. lymphonuclear	Lymphocytes.	Large mononuclears and transitionals.	Eosinophiles.
1	I	March 6, 1910...	....	70	24	4	2
			(Arneth's classification)				
			I 7				
			II 35	} 42			
			III 44				
			IV 14	} 58			
			V 0				
		April 3, 1910....	....	48	44	8	0
			(Arneth's classification)				
			I 4				
			II 27	} 31			
			III 64				
			IV 5	} 69			
			V 0				
2	I	March 6, 1910...	....	56	32	8	4
			(Arneth's classification)				
			I 6				
			II 29.5	} 35.5			
			III 41.5				
			IV 17	} 64.5			
			V 6				
		April 10, 1910..	....	60	35	5	0
			(Arneth's classification)				
			I 9				
			II 41	} 50			
			III 40				
			IV 9	} 50			
			V 1				
3	II	April 17, 1910...	....	62	34	4	0
			(Arneth's classification)				
			I 3				
			II 18	} 21			
			III 64				
			IV 10	} 79			
			V 5				
		April 24, 1910...	10,000				

STATIONARY CASES.

4	II	February 13, 1910	....	62	30	6	2
			(Arneth's classification)				
			I 5.5				
			II 28	} 33.5			
			III 44.5				
			IV 17	} 66.5			
			V 5				
		April 10, 1910...	....	64.5	29	6	0.5
			(Arneth's classification)				
			I 8				
			II 27	} 35			
			III 42				
			IV 22	} 65			
			V 1				
		April 24, 1910...	6,000				
5	II	April 10, 1910...	....	70.5	23	4.5	2
			(Arneth's classification)				
			I 7				
			II 49	} 56			
			III 37				
			IV 7	} 44			
			V 0				
		April 24, 1910...	6,200				
6	II	April 10, 1910...	....	62	34	4	0
			(Arneth's classification)				
			I 0				
			II 28	} 28			
			III 60				
			IV 12	} 72			
			V 0				
		April 24, 1910...	7,200				
7	III	January 6, 1910.	....	62	32	4	2
			(Arneth's classification)				
			I 6				
			II 28	} 34			
			III 41				
			IV 21	} 6			
			V 4				

No.	Stage.	Date.	Total count.	Percentage of Polymorphonuclear		Lymphocytes.	Large mononuclears and transitionals.	Eosinophiles.
7	III	February 27, 1910	....	68		28	3	1
			(Arneth's classification)					
			I	6	} 40			
			II	34				
			III	44				
			IV	15	60			
			V	1				
		ADVANCING CASES.						
8	II	April 3, 1910....	....	42		54	4	0
			(Arneth's classification)					
			I	0				
			II	29	29			
			III	71				
			IV	0	71			
			V	0				
		April 10, 1910...	....	62.5		31	3.5	3
			(Arneth's classification)					
			I	7	} 63			
			II	56				
			III	34				
			IV	3	} 37			
			V	0				
		April 24, 1910...	9,800					
9	III	February 27, 1910	....	68		26	5	1
			(Arneth's classification)					
			I	6	} 35			
			II	29				
			III	41				
			IV	21	} 65			
			V	3				
		March 6, 1910...	....	72		21	5	2
			(Arneth's classification)					
			I	6.5	} 37.5			
			II	31				
			III	45.5				
			IV	15	} 62.5			
			V	1				
		April 10, 1910...	....	65		29	5	1
			(Arneth's classification)					
			I	7	} 50.5			
			II	43.5				
			III	38				
			IV	10.5	} 49.5			
			V	0.5				
10	III	February 6, 1910.	....	66		30	3	1
			(Arneth's classification)					
			I	6	} 31			
			II	25				
			III	44				
			IV	19	} 69			
			V	6				
11	III	February 6, 1910.	....	67		28	4	1
			(Arneth's classification)					
			I	7	} 34			
			II	27				
			III	46				
			IV	17	} 66			
			V	3				
		April 10, 1910...	....	78		24	8	0
			(Arneth's classification)					
			I	7	} 21			
			II	14				
			III	54				
			IV	20	} 79			
			V	5				
		April 24, 1910...	10,400					
12	III	February 1, 1910.	....	54		32	10	4
			(Arneth's classification)					
			I	4.5	} 40.5			
			II	36				
			III	45.5				
			IV	13	} 59.5			
			V	1				
		March 20, 1910..	....	60		35	4	1
			(Arneth's classification)					
			I	3	} 36.5			
			II	33.5				
			III	44				
			IV	14.5	} 63.5			
			V	5				
		April 10, 1910...	....	60		30	8	2
			(Arneth's classification)					
			I	3	} 25			
			II	22				
			III	67				
			IV	8	} 75			
			V	0				
		April 24, 1910...	8,400					

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ECTOPIC GESTATION FROM THE STANDPOINT OF CLINICAL EXPERIENCE.*

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During the past twenty months while I have been on service at the Columbus Hospital of this city we have had thirteen cases of ectopic gestation; and I propose to make a study of them, with the general conception of this subject as my background.

Ectopic gestation I define as any pregnancy occurring outside of the uterine cavity, which is the natural seat of fœcundation.

VARIETIES.

Interstitial; that is, conception in the uterine portion of the Falloppian tube.

Isthmial; where the implantation occurs in that part of the tube which connects the main portion of the tube, the ampulla, to the uterine portion. The length of tube involved is about two centimetres.

Ampullar; where the ovum lodges in that portion of the tube which is curved backward and outward. It is from six to eight centimetres wide. This is the seat of most frequent implantation.

Tuboovarian; where impregnation occurs at the site of a previously agglutinated ovary and the fimbriated extremity of a tube. Or where an ovum previously lodged at the fimbriated extremity attaches itself by reason of its growth to the ovary also. Or, again, where a previously purely tubal gestation by partial abortion of a still viable ovum becomes attached to the ovary also.

Ovarian; where the conception is in the ovary alone. Too many cases have been recorded since Van Tussenbrock's case was demonstrated as purely ovarian to permit doubt of this variety.

CAUSES.

Embryologists teach us that the tube is, as a rule, the place where the spermatozoa impregnates the

*Read at the thirty-second stated meeting of the Triprofessional Medical Society, held at the Hotel Astor on February 15, 1910, and discussed by Dr. Egbert H. Grandin, Dr. Simon Marx, Dr. Charles F. Adams, Dr. G. K. Dickenson, and Dr. Ross McPherson.

ovule, and that anything which interferes with the ovum's reaching the uterine cavity will cause an ectopic gestation.

A study of these tabulated cases shows a pretty constant association of previous or concurrent lesions. The conditions which cause unnatural implantation are: Inflammatory diseases which leave impaired functionating mucosæ and impaired peristalses; conditions which offer mechanical obstruction to the gaining of the uterine cavity by the ovum —as tumors, kinks, strictures, occlusions, etc; dense adhesions of the tube to the ovary, uterus, broad ligament, or intestines, which distort the lumen and limit or prevent the normal motion of the tube; congenital malformations, especially diverticula of the lumen where an ovum is likely to be arrested; uterine myomata. Again, tubal gestation may occur without any ascertainable lesion, in which case a particularly vicious ovum apparently seizes the nearest surface as its bed. Whether a disturbance of innervation explains these cases I am unable to state.

As my reports deal with extrauterine tubal gestation I shall not discuss the interstitial, tuboovarian, ovarian, or abdominal types, except to say that the abdominal variety is always primarily tubal in origin.

NATURAL COURSE OF THESE CASES:

The ovum may die and be absorbed or it may end in a mole formation, hydrammios, or in a chorioepithelioma. The gestation may end in partial or in complete abortion through the free end of the tube. It may terminate, and as a rule does, in primary and secondary rupture of the tube with partial or complete emptying of the tubal contents into the abdominal cavity or into the broad ligament. The case may go to term with false labor, involving the death of the fœtus, absorption of the amniotic fluid, and digestion of the soft parts, while the skeleton may be encapsulated or discharged through the vagina, intestines, or through the abdominal walls. Or again, the fœtus may be converted into a lithopedium or into an adipocere. The explanation of these ruptures and abortions lies in the ovum. The ectodermal layer of the ovum is converted into cells which the embryologists term trophoblasts, and these cells have phagocytic powers which in tubal gestation as a rule bring about the ending of their maker. In uterine pregnancies these cells digest the mucous membrane to make their bed. Their action here is limited by the thick structure of the uterus and by its decidual reaction. In the tube we have a thin and highly vascular structure, and in these cases practically no decidual reaction exists to limit the destructive action of these cells. The trophoblasts ulcerate or erode the vascular channels or vessels and produce first intervillous hæmorrhage which results in the dislodging or dissection of the ovum from its site. Often the placenta will be found dissected from its base by blood clots. The continued action of the trophoblasts causes erosion or ulceration through the tube and hæmorrhage into the abdomen or broad ligament. Gestation sacs have been known to rupture while the women were lying quietly in bed, showing that external pressure or violence are not essential factors in bringing about the condition.

CLINICAL HISTORY:

In the cases seen between their second and seventh weeks, the period when primary rupture usually takes place, we may or may not have the corresponding signs of uterine pregnancy—morning nausea and vomiting. The patient may tell you that she feels pregnant. At times, especially in primapara, the breasts swell and become painful as early as the second week after conception. A purplish discoloration of the vagina or of the urethral bulb may be noticed as early as the sixth week. Hegar's sign may be present and enlargement of the uterus, especially in its longitudinal diameter. From the eighth week to the third month we have, as a rule, the signs of a corresponding uterine gestation without the corresponding enlargement of the uterus; and in those cases that go to term or beyond the third month the general symptoms of pregnancy are present, with, of course, a uterus that is comparatively small in its empty condition. In ectopic gestation we may have also the corresponding toxæmias of uterine conception.

A disturbance usually appears in the normal menstrual rhythm, but is not necessarily amenorrhœa. The eleventh case tabulated shows but twenty days elapsing since her last menstrual period in a woman who was recorded as regular. It is most essential to ascertain if the last menstrual period was disturbed in amount, duration, or periodicity.

Sudden sharp peritoneal attacks, the pain of which the patient describes as cramplike, with such of the symptoms which I have enumerated as may be present, should direct our attention to the pelvis immediately.

Vaginal bleeding, the discharge of blood clots, decidua and continuous sanguinous oozing should arouse suspicion. Of the thirteen cases recorded at least eleven women undoubtedly had these symptoms. The list shows cases bleeding intermittently from one day to six weeks.

The abdominal signs are:

Distention, and tenderness over the lower zone. The uterus may or may not be enlarged. As a rule it is and its enlargement, as one would expect from its empty condition, is mainly in its longitudinal diameter.

A soft, boggy mass to either side or posterior to it. In Case IV no mass could be found under anæsthesia, but the uterus was retroflexed and the sac was undoubtedly beneath the uterine body. This woman had acute gonorrhœal urethrites and the case was diagnosticated a pus tube to eventuate in a septic hæmatocele with recovery.

A history of previous sterility. This is a valuable help in suspected cases, but a glance at the tabulated cases will show its fallibility. The patient of Case II gave birth to a child six months prior to her ectopic pregnancy, and the woman of Case XIII did so nine months previously.

A history of previous ectopic gestation. Two of the tabulated cases, I and III, were repeaters. In Case III that fact and the woman's history should have lead to an early diagnosis, in which case her death from subsequent intestinal obstruction might have been avoided.

External violence, as bimanual examination and coughing and tugging, etc., are often direct fore-

runners of very alarming symptoms, such as internal hæmorrhage, the signs of which are shock, faintness, dizziness, thirst, increase in pulse rate—which may reach in severe cases 130 or 140 with but little increase in temperature. When cases become septic, of course the temperature increases proportionately. A study of the cases tabulated shows in most instances no alarming symptoms of internal bleeding, the pulse, as a rule, being but slightly accelerated. Where extensive bleeding leads to the formation of a hæmatocele you get dulness on percussion over the lower abdomen, a floating upward of the intestines, and on bimanual examination an immense exudate filling the entire pelvis and a good part of the abdominal cavity. If you keep in mind the fact that the erosions may vary in size from minute points to actual tears and that the hæmorrhage may be arterial, venous, or capillary the variations in the amount of bleeding become explainable.

An examination of the tabulated cases shows the average age of these women to be thirty and a half years; average married life, nine and one ninth years; average number of children, two and a half; average period of relative sterility, four and six seventh years; and average lapse of time between the last known menstrual flow and the onset of symptoms to be thirty-seven and a half days.

Knowing the parasitic influence of an ovum in the tube we can look for symptoms almost from the beginning of conception and we can expect on an average that primary rupture will occur about the fifth or sixth week of gestation.

The microscopical demonstration of the decidual nature of a uterine cast with a growing, boggy mass on either side of the uterus or posterior to it is a pathognomonic of tubal gestation. The absence of chronionic villi in a decidual cast or in scrapings is strong presumptive evidence of an ectopic gestation, but it must not be forgotten that a curettage for diagnosis may be performed after the passage of a decidual cast, in which case no chorionic villi will be found.

DISTINCTIVE DIAGNOSES:

Ectopic pregnancies must be differentiated from other pregnancies, as uncomplicated uterine pregnancy, a gravid, bicornuate uterus, a gravid, retroflexed uterus. And we must bear in mind the possibility of tubal and uterine gestations coexisting. Tumors may resemble ectopic gestation. Ovarian cysts, especially those with twisted pedicles or such as by inflammatory attacks become attached to the uterus. Intraligamentary tumors also confuse one and often these can be differentiated only by incision. Rupture may be simulated by uterine abortions, appendicitis, rupture of intestinal ulcers, twisted or inflamed pelvic tumors, a combination of abortion with pelvic cyst or pyosalpinx.

Two of my cases were admitted to the hospital as abortions and one woman had been curetted at her home. Bimanual examinations revealing boggy masses and histories of cramplike pains, bloody vaginal discharges, with enlarged uteri cleared the diagnoses.

Two women were admitted as cases of appendicitis. One of these, Case IX, I cannot discuss for the history is missing. Case X presenting a history of fifty-three days since her previous menstrual period, suffering from cramplike pains, bloody vaginal discharge, and a boggy mass to the right side of an enlarged uterus and posterior to it, should have suggested the diagnosis. On the other hand, here was a woman with a pulse ranging from 110 to 130 just after arriving at a hospital for operation, temperature of 102° F., a history of vomiting, and her tenderness and tumefaction manifesting itself in the region of the appendix. Case II was not suspected and I see no reason why it should have been. The patient was only twenty-three years of age; she had one child six months old, had menstruated last twenty days previously, and her pelvis was almost entirely occupied by a tuboovarian cyst. She had suffered no cramplike pains.

The remainder of these cases were diagnosticated, with the exception as already noted of Case IV. Case XII was especially instructive as it showed the relation between the pulse and an unruptured tubal gestation. Of course we had cases come in during these twenty months where tentative diagnoses of ectopic gestations were made, to turn out otherwise at operation. One was a case of ovarian cyst with a twisted pedicle; and another an ovarian cyst the sac of which became inflamed, and the tumor was attached to the lateral and posterior walls of the uterus. Here we had an enlarged uterus, a soft mass to the side and posterior to it, cramplike pelvic pains, continued vaginal bleeding. Only the incision cleared the diagnosis. Another case was admitted with the history of two months amenorrhœa, cramplike abdominal pains, passage of blood clots, continued bloody vaginal oozing, an enlarged uterus, and a tender, soft, movable mass to the left of the uterus. The woman had a temperature of 102° F. and her pulse was 96. Operation showed uterine abortion and a freely movable left pus tube.

TREATMENT:

The fœtus invariably dies and hence does not become a factor in considering the treatment. According to Schauta the maternal mortality in non-operative cases is 68.8 per cent. I should be inclined to feel that this percentage is too high as I am of the opinion that more cases of ectopic gestation escape recognition and live than we have suspected. At our hospital we always operate and operations performed speedily and promptly should not give a mortality of over two per cent. The dangers are from shock, hæmorrhage, sepsis, exhaustion, and intestinal obstruction. Two of our patients died, one from intestinal obstruction and the other apparently from exhaustion. The latter was a veritable pathological museum and it was little wonder that she succumbed. I do not know but that blood transfusion might have saved her. The other woman might have been saved by early operation. All cases but one were treated by abdominal section. That one was an infected hæmatocele and was evacuated by posterior vaginal section and drained by a gauze pack. A survey of the pulse counts shows that these cases with few exceptions should be treated like other laparotomies. Time enough should be taken properly to prepare the patient and the operation in uncomplicated cases should not occupy more than fifteen or twenty minutes. I do not mean to imply that a wait of several days is advisable, but merely the necessary number of hours for proper preparation. In a small percentage of cases

the hæmorrhage is alarming and my advice is to operate immediately and speedily, and as soon as hæmorrhage is checked to transfuse with normal salt solution or with blood. Case III with a history of fifty-six days elapsing since the last normal menstrual period, of sudden, severe abdominal pain on the previous day, and of having to go to bed one hour later from weakness, is of this variety. The woman was operated upon immediately after reaching the hospital in a practically exsanguinated condition and while on the operating table fifty-two ounces of normal salt solution were injected into her veins. Pulse and temperature were normal two weeks after the operation. The longer the period since the last menstrual flow, especially with symptoms of rupture, the more urgent the necessity of immediate operation.

Observation of the temperature in uninfected cases shows it to be normal as a rule within four or five days. The pulse reaches a steady and comparatively normal count in from five to fourteen days. The majority of cases are up and around at ten days without disturbance of pulse or temperature.

Eight women of the tabulated cases awaited the regular operating day for periods varying from one to six days. Four of the patients were operated upon on the day admitted, as emergency cases.

Ten of these cases came to the regular gynæcological service of Dr. Egbert H. Grandin, Dr. Charles F. Adams, and the author. Two were private patients, one of whom belonged to Dr. Adams, the other to the author. A third entered the general surgical service and was operated upon by Dr. Frederick M. Ives.

Case I. M. G. Admitted, June 13, 1908. Discharged, July 2nd. Age, twenty-two years. Nativity, Italy. Residence in the United States, nineteen years. First menstruated at twelve years of age; irregular type. Married, three years; two years previous to operation had first child. Last September operated upon in this hospital for ectopic gestation.

Present history. Last menstruation April 19th, lasted four days and was quite painful throughout. May 20th noticed leucorrheal discharge. May 24th had violent pain in lower abdomen, lasting three hours. One week later had another attack accompanied by several large clots of blood. Bleeding continued off and on and pains persisted, but were less severe. Patient appeared pale. Mass to left of uterus. Uterus not enlarged. Pulse for three days previous to operation ranged from 90 to 100. Temperature normal. Laparotomy performed June 15, 1909. Left ectopic gestation with rupture. In two weeks the pulse was normal.

Case II. M. M. Admitted, September 17, 1908. Discharged, October 4th. Age, forty years. Nativity, Italy. Residence in the United States, ten years. Patient first menstruated at fourteen years of age; regular type, flow lasting four to five days with slight pain. Last menstruation August 21st.

Present history. Six weeks ago had pain in lower part of abdomen, backache, slight bloody discharge, and fever. September 17, 1908, pulse was 110; temperature, 99.6° F.; respiration, 24. Pulse on the following day was 94. Laparotomy performed, September 18th. Left tubal gestation with rupture. Pathological report revealed chorionic villi. Report showed that the tube was enlarged with a ruptured sac before it and communicating with it. Specimen indicated a primary rupture some time before operation. Dense adhesions to broad ligament and uterus. Temperature fluctuated from 99° to 101° F. till ten days after operation when it became normal and remained so. Pulse ranged from 98 to 114, gradually coming down till two weeks had elapsed, when it reached 74 to 78, where it remained until she was discharged.

Case III. R. C. Admitted, October 18, 1908. Died, October 22, 1908. Age, thirty-five years. Nativity, Italy. Residence in the United States, fifteen years. Married fifteen years, and had two children.

Previous history. Operated upon in this hospital eight years before for pelvic abscess of the right side. Operated upon by me at her home eight months previous to present attack for left tubal gestation. Her menstruation was regular, lasting four days with slight pain. Last menstruation had occurred three weeks before.

Present history. Three weeks previously had severe colicky pain in lower abdomen, followed by a bloody vaginal discharge. The symptoms abated, but three days later she had a similar attack accompanied by vomiting and constipation. Symptoms after a week abated and returned at end of seven days. The vomiting was not controllable, and the symptoms persisting she was admitted to the hospital at 7 p. m., October 18th. Examination showed the abdomen distended and tender over entire lower portion. Pulse, 140; temperature, 103° F.; respiration, 30. Operated upon at night one hour after admission. Clots and free blood were found in the abdomen. The right tube was the seat of a ruptured ectopic gestation sac. The small intestines were enmeshed in bloody masses. She was transfused with salt solution during operation.

Pathological report. Masses of blood clots showing organization in their centres. Microscopic report revealed chorionic villi.

After treatment. Stimulating enematata. Pulse and temperature came down, and at 10 a. m. on October 21st, the pulse was 116, temperature, 100° F., respiration, 26. The vomiting continued, showing complete obstruction of the bowels, which did not move after operation, and patient died October 22, 1908.

Case IV. M. A. Admitted, January 21, 1908. Discharged, March 21, 1909. Age, twenty-nine years. Nativity, Italy. Residence in the United States, six years. Menstruated first at thirteen years of age; always regular, flow lasting five or six days. Not much pain or blood. She had had five children, the last having been born six years before present gestation. One abortion had occurred nine years previously. She had menstruated last December 26, 1908.

Present history. Eight days previously she began to bleed from the vagina, and suffered cramplike pains in the pelvis and was annoyed by morning vomiting and loss of appetite. The bleeding was continuous and the pains came at intervals. There was tenderness over the hypogastrium and over the left iliac region. Under chloroform no mass was felt. She had acute gonorrhœa. Temperature, 99.6° F., pulse, 99. On the following day the pulse went up to 112. She vomited and complained of dizziness. The pulse on the next day reached 120; the temperature was 98° F.; respiration, 18. The day after that the pulse dropped to 72, and until the 29th instant it fluctuated between 72 and 120; temperature was from 98° to 99° F.; respiration from 15 to 18. Under anæsthesia a diagnosis was made of adherent retroverted uterus and probable salpingitis. The operation was deferred until the acute stage passed. The condition was septic. The temperature ranged from 98° to 102° F.; the pulse from 90 to 130; the respiration from 18 to 30. She complained of severe cramplike pains, vomiting, nausea, dizziness, etc. A large exudate was palpable bimanually, and a posterior section was performed on February 12, 1909. An enormous hæmatocele was evacuated and the cul-de-sac packed with gauze. She followed the usual septic course and was discharged as cured March 21, 1909. Pulse, temperature, and respiration were normal.

Case V. N. D'G. Admitted, January 25, 1909. Discharged, February 6, 1909. Age, thirty-five years. Nativity, Italy. Residence in the United States, two years. Married first thirteen years before, and a second time three years before present attack. First menstruated at fifteen years of age. Always regular; moderate loss of blood, flow lasting three days with some pain. She had never had an abortion, and her last child was born five

years before. Her last menstruation had occurred on December 22, 1908.

Present history. The patient had had pelvic pain for some time. She had been fairly regular, menstruating about the thirteenth of the month. Her last regular period was November 13th; she missed December 13th, but on December 22nd began to flow and had been flowing since, with abdominal cramps. She complained of tenderness over the lower abdomen. The uterus was enlarged and soft, and there was a soft, boggy mass to the left of the uterus. Pulse, 102; temperature, 99° F.; respiration, 20. Abdominal section showed ruptured left tubal gestation. Pulse after operation 96. She was discharged as cured; pulse, 80; temperature normal. Microscopic report showed chorionic villi. Ovary sclerosed and cystic, and ovary and tube agglutinated and twisted.

Case VI. R. G. Admitted, February 3, 1909. Discharged, February 25, 1909. Age, twenty-five. Nativity, Italy. Residence in the United States, five years. She first menstruated at eighteen and was regular. The flow lasted three days and was accompanied by much pain and loss of blood. She menstruated on December 1st and next on January 9th, since which she had been bleeding continuously. She had severe pains in the left iliac region and felt weak. The uterus was soft and boggy. Pulse, 84; temperature, 98° F. An operation was performed on February 5, 1909. Abdominal section revealed ruptured gestation sac of the left tube. There was free blood in the peritonæum. Tube and ovary were adherent to the left and posterior walls of the uterus. The tube was dilated and filled with a recent blood clot. Ovary was cystic and sclerosed. Microscopic report revealed chorionic villi. Pulse after operation 90. It reached 78 on the 15th and stayed there.

Case VII. A. P. Admitted, April 1, 1909. Discharged, April 15, 1909. Age, thirty. Nativity, Italy. Residence in the United States, two and one half years. Patient had been married twelve years, and had had one child, nine years before present attack, and no abortions. Menstruated first at thirteen years and had always been regular, the flow lasting eight days without pain.

Present history. She had menstruated the last week of January and not again till March 10th, when she started to flow and had continued to do so. For the previous three days the flow had been very profuse. She complained of cramplike pains and of tenderness over the lower right side of the abdomen. Pulse, 98; temperature, 99.6° F.; respiration, 20. Operated upon at 2 a. m. Abdominal section showed right tubal gestation. The left tube being diseased was removed. Microscopic report showed chorionic villi. Pulse after operation, 96; temperature, 99° F.; respiration, 20. Pulse and temperature gradually came down, pulse to about 80, temperature to normal. Discharged at the end of two weeks.

Case VIII. M. F. Admitted, June 18, 1909. Discharged, July 4, 1909. Age, thirty-nine years. Nativity, Italy. Residence in the United States, nine years. She had had four children and no abortions. She menstruated first at fifteen years of age and had been regular and free from pain. Her last flow had occurred two months previously.

Present history. The day before she had felt severe abdominal pain and one hour later she became weak and went to bed. The trouble was diagnosticated as extrauterine gestation. The abdomen was hard, tender, and swollen. The patient was practically pulseless, her breathing shallow, and her face colorless. Temperature, 99° F. Operation was performed June 19, 1907. Abdominal section showed free intraperitoneal hæmorrhage with clots from ruptured right tubal gestation sac. There was a left tuboovarian cyst. Pathological report showed that the left tube contained mucopurulent material. The right tube was twisted and constricted. The fœtal sac contained no villi or fœtus. Fifty-two ounces of normal salt solution were infused by vein during operation. Pulse and temperature became normal two weeks after operation.

Case IX. O. P. Admitted, June 22, 1909. Discharged, cured, July 18, 1909. Native of Germany. Diagnosticated appendicitis. Operation revealed right ectopic gestation. Record of case missing.

Case X. M. T. Admitted, July 28, 1909. Discharged, August 12, 1909. Age, twenty-five. Nativity, Italy. Residence in the United States, three years. First menstruated at fifteen. The flow had been regular, lasting seven or eight days, with a normal loss of blood and no pain. She had been married two years and had had no children and no abortions. Her last period was on May 82th; on July 20th a slight bloody discharge appeared. On July 25th she felt a sudden sharp and severe pain over the lower abdomen and sacrum. The following day she vomited three times and once two days afterward. She felt weak and complained of dizziness. Vaginal examination showed a mass palpable in posterior fornix. The abdomen was distended and generally tender. The uterus was somewhat enlarged, and a soft and boggy mass lay to the right of it. At 2.30 p. m., pulse was 110; temperature, 100° F.; respiration, 26. At 6 p. m., pulse, 132; temperature, 101° F.; respiration, 28.

Operation was performed July 28th at 6.30 a. m. Abdominal section and appendix incision. A ruptured right tubal gestation sac was shown. The left tube and ovary were normal. At 8 p. m., pulse, 134; temperature, 102° F.; respiration, 26.

Pathological report showed ovary slightly larger than normal and large corpus luteum at the right side. The tube was covered on the peritoneal surface with cysts; the free end was well developed, the uterine end constricted and ruptured between ligature at centre. Temperature and pulse gradually came down until August 12th when the pulse was 82; temperature, 98° F.; respiration, 20. The pulse reached 80 on August 7th and remained steady afterward. She was allowed to get up on August 7th.

Case XI. M. S. Admitted, September 4, 1909. Died, September 7, 1909. Age, twenty-three. Nativity, Italy. Residence in the United States, two years. Married five years. Patient had had no abortions and her one child was six months old. She menstruated first at sixteen years of age and always twice a month, flow lasting four days each time and rather abundant in amount and preceded by pain. After marriage flow became regular in time and amount. The last period had occurred on August 15th. Bowels regular, appetite good.

Present history. Patient complained of continuous pain in lower abdomen for past two months. Her body was well nourished; mucous membranes had good color; tongue was clear; examinations of head, chest, and neck were negative. Abdominal walls were soft. At the lower part of the abdomen there was tenderness over symphyses, and to the left of the median line a hard and tender mass was felt. Tenderness over the right iliac fossa on palpation. No muscular rigidity. Pulse from then till operation ranged from 80 to 86; temperature and respiration were normal. September 10th curettage and abdominal section were performed. There was a large tuboovarian cyst to the left of uterus. General peritonitis with numerous old adhesions. Appendicitis: general free blood in pelvis, and a ruptured ectopic gestation sac seen to right of uterus and removed. Drainage through vagina. Subsequent course was of general prostration. Patient died September 7, 1909.

Case XII. L. C. Admitted, October 13, 1909. Discharged, November 2, 1909. Age, thirty-two. Nativity, Italy. Residence in the United States, eight years. Menstruated first at fourteen years of age; courses were regular and normal in amount. Some pain preceded flow. She had been married twelve years and had had no children and no abortions. Since marriage menstruation had become painful and irregular and excessive in amount. She had been operated upon three years before in this hospital for appendicitis.

Present history. She was examined one year before in Italy and a right cystic ovary was diagnosticated. Three months before present attack she began to suffer pain in lower abdomen. Menstruation had since been abundant. Suffered fifteen days before from a hæmorrhage. Pulse, 68; temperature, 98° F.; respiration, 20. Operated upon on the 15th. Pulse ranged from 62 to 72 on the two days before the operation and was 64 immediately before the

operation. Abdominal section was performed October 15, 1909, and an unruptured tubal gestation sac found. The tube was twisted and bound by dense adhesions. Pathological report revealed tube thickened and lumen obliterated in places. There was a sac containing a blood clot and shaggy mass. Microscopical examination revealed chorionic villi. Pulse reached 72 six days later. Temperature, 99.2° F. for a few days.

Case XIII. M. I. Admitted, January 4, 1910. Age, thirty. Nativity, Italy. Residence in the United States, two and one half years. First menstruated at fourteen years of age. Regular and normal as to time and amount and accompanied by no pain. Married eight years. Had had four children, the last born nine months before present illness—a stillbirth at term. No abortions. She had a bloody vaginal discharge. Pulse, 90; temperature, 98° F.; respiration, 18. Operation performed three days after admission. Pulse during those three days ranged from 84 to 90. Temperature and respiration normal. Bimanual examination revealed a symmetrically enlarged uterus and a soft, boggy mass to the left of it. A curettage and abdominal section were performed. Right ovarian cystoma; left tubal gestation sac, partial rupture, free blood in perineal cavity found. Pathological report revealed Falloppian tube distended into sac containing blood clots and shaggy mass. Under microscope chorionic villi seen. Ovary enlarged, distorted, and adherent to tube. Patient had an evening temperature of 99° F. for five days. Pulse after operation 96 and ranged from 90 to 104 for a week. It steadied gradually and at the end of second week dropped to 80, where it remained until she was discharged. Last menstrual period twenty-eight days previous to December 27, 1909, had been bleeding since December 27th. Discharged, January 27, 1910.

Cases.	Age in years.	Number of years married.	Children.	Age last child.	Previous ectopics.	Last menstruation.	Type.	Sac revealed chorionic villi.	Pulse range previous to operation.	Associate lesions.	Most constant symptoms.
1	22	3	1	2 years ago	1, 9 months ago	42 days ago	irregular		90 to 100	None noted	Cramplike pains in abdomen followed by discharge of blood clots; continued pains and bleeding; mass to left of uterus.
2	40					31 days ago	regular	found	94 to 110	Dense adhesions to broad ligament and to uterus	Six weeks ago abdominal pain, backache, bloody vaginal discharge; fever.
3	35	15	2	10 years ago	1, 8 months ago	30 days ago	regular	found	around 140	Pelvic abscess to right side of uterus eight years ago; right tube ruptured; organized blood clots diminished the small intestines	Three weeks ago had severe colicky abdominal pains followed by bloody vaginal discharge; three days later similar attack accompanied by vomiting and constipation; symptoms abated and returned at end of two weeks; at time of admission had distended and tender abdomen, vaginal hemorrhage, colicky pains, vomiting, and constipation; uterus enlarged.
4	29	12	5	6 years ago		23 days ago	regular		72 to 130	Acute gonorrhœa	Morning vomiting, loss of appetite, eight days ago had cramplike pains in pelvis accompanied by bloody vaginal discharge; bleeding continued; symptoms of bleeding on and off until hæmatocele was evacuated.
5	35	13		5 years ago		40 days ago	regular	found	around 102	Fibrocystic ovary. Tube agglutinated and twisted	Abdominal cramplike pain followed by vaginal hæmorrhage; bloody oozing extended over one month; lower abdomen tender; boggy mass to left of uterus.
6	25					40 days ago	regular	found	84	Fibrocystic ovary; tube and ovary adherent to left and posterior wall of uterus	Abdominal pains in left iliac region; vaginal hæmorrhage for past twenty-six days; uterus soft and boggy.
7	30	12	1	9 years ago		40 days ago	regular	found	98	Diseased left tube	Cramplike abdominal pains and bloody vaginal discharge for past twenty-one days; lower abdomen soft and tender; boggy mass to left of a soft boggy uterus.
8	39		4			56 days ago	regular			Left tuboovarian cyst; left tube contained mucopurulent fluid; right tube twisted	Yesterday had severe peritoneal attack and one hour later went to bed in collapse; diagnosticated intrauterine pregnancy; abdomen on admission tender and swollen; condition indicated exsanguination; immediate operation; fifty-two ounces of salt solution infused during operation.
9											
10	25	2				53 days ago			110 to 132	Corpus luteum on right side of ovary; tube covered on peritoneal surface with cysts; uterine end constricted; rupture in center	Eight days ago slight vaginal discharge; five days later sudden severe sharp pain over lower abdomen and sacrum; following day vomited three times and once the next day; felt weak and complained of dizziness; abdomen distended and tender; uterus enlarged and boggy mass to right of it; diagnosticated appendicitis; operation by appendix route.
11	23	5	1	6 months ago		20 days ago			80 to 86	Large tuboovarian cyst left side; extensive old adhesions all over general peritoneum of appendical origin; ruptured right tube	Hard and tender mass in left iliac fossa; tenderness over right iliac fossa.
12	32	12						found	62 to 72	Tube twisted and bound by adhesions; lumen in places obliterated; operation three years previously for appendicitis; unruptured tubal gestation	Three months ago had some abdominal pain.
13	30	8	4	9 months ago		28 days ago			84 to 90	Ovary enlarged, distorted and adherent to tube; partial rupture of left tube	Slight bloody vaginal discharge for past eight days; boggy mass to left of uterus.

104 East Twenty-ninth Street.

A CASE OF LARYNGEAL SYPHILIS.

*With a Description of the Difficulties of Differential Diagnosis.**

By Harmon Smith, M. D.,
New York.

L. W. S., male, twenty-five years old when first seen by Dr. John Woodman, of New York city. At this visit, October 29, 1901, the patient had an initial syphilitic lesion for which he was treated.

In January, 1902, mercury was administered in full doses internally and externally. In July, 1902, mixed treatment was instituted. From this time on for three years antisyphilitic treatment was faithfully given.

Six years after the initial lesion, in February, 1908, the patient had an attack of laryngitis, accompanied with hoarseness and redness of the right vocal cord, which disappeared under treatment given by Dr. Woodman. In April, 1908, an abscess developed in the right cheek, which was supposed to be due to a bad tooth, but which persisted for a long while and finally yielded to mixed treatment. In May, 1908, the right vocal cord appeared thickened and abnormally red, while the adjacent tissues were inflamed. On May 28, 1908, the patient was sent to me by Dr. Woodman with the history just related.

Examination: Patient was extremely thin and angular, with a large projecting larynx. His voice was strong and husky. Examination showed no anæmia of the mucosa, of the pharynx, or of the larynx. The right vocal cord had a small soft polypoid looking mass about its centre, which seemed to project from the ventricle upon the cord. There was slightly retarded movement, and the tissues were hyperæmic and swollen. I diagnosticated the condition as laryngeal syphilis, and advised mixed treatment to be continued and increased daily in quantity.

I saw him again one month later, at which time there appeared to be slight improvement. The patient then disappeared for one year from my observation, but Dr. Woodman has given me these additional notes:

In February, 1909, eight months after I had seen him last, the patient consulted another throat specialist, who diagnosticated the condition as laryngeal syphilis, but advised that he substitute iron for the mixed treatment he was then taking. This was tried for one month, and as the condition did not improve, he consulted still another throat specialist, who promptly said he did not know what it was.

On June 8, 1909, the patient came again to my office, and the examination of the larynx showed an entirely different picture. A globular swelling projected into the larynx from the right ventricle which obscured in a measure a view of the right cord. The cord itself was reddened and thickened, and there appeared to be some projection into the larynx just below the cord. There was slight limitation of movement of the cord in phonation, which increased perceptibly, but not markedly, for several months.

The diagnosis now seemed to lie between syphilis, tuberculosis, and a malignant neoplasm. The voice was still very strong, but very hoarse. Slight pain was experienced on swallowing at times. The patient had lost some weight, and was quite emaciated in appearance, although he assured me he felt strong. I had Dr. Jonathan Wright see him at this time, and his remarks will be given later. I felt moderately certain that the case was specific, although mercury and potassium iodide had been so thoroughly administered for so long a period.

Potassium iodide was given again in the essence of pepsin, beginning with 60 grains three times a day; and increasing the daily dose until iodism appeared. The pepsin and water was later changed to a glass of milk as a vehicle for the iodides. The iodides were increased to 120 grains, three times a day, when digestive disturbances prevented further increase.

Morning, afternoon, and evening temperature was taken, with a result that over a period of eighteen days the morning temperature varied from 98.6° F. to 100.4° F., the noon from 98.6° F. to 99.6° F., and the evening from 98.8° F. to 101.8° F. Physical examination of the lungs was negative, and the examination of six specimens of sputa was also negative. There was slight glandular involvement just below the larynx.

Mercury was given by inunction. Iron, phosphorus, and arsenic were also given internally. The tumor seemed to increase slowly during the month of June, but there was no appearance of any projection that would justify an attempt at obtaining a specimen for examination. The tumor seemed to lie well beneath the mucous membrane, and any attempt to get a specimen would have necessitated cutting deeply into the tissues.

At the end of June the advisability of approaching the tumor extralaryngeally was considered, but before doing so I sent the patient to a well known throat specialist who has had considerable experience in the diagnosis of tuberculous laryngitis, and he diagnosticated the condition as tuberculous, or at least a tuberculoma. This made me hesitate to operate.

In July the patient had a small hæmorrhage following a coughing spell, which seemed to confirm the diagnosis of tuberculosis, but upon examination of the larynx I found a small ulcerative spot on the apex of the tumor, from which it appeared the blood might have come. From this time the swelling seemed to gradually subside, and in August the patient was advised to go to the Adirondacks for a month. This change seemed to benefit him very much, and on his return there was marked diminution of the swelling. This improvement continued until the ventricle became a deep depression where the prominence of the tumor had previously attained its maximum.

There is still restricted movement of that side and the mucous membrane of the ventricle seems to be retracted by some adhesive force, as from a cicatrix. The cord is slightly hyperæmic, and when first observed with the laryngoscope will appear red and dry, but upon continued phonation incident to examination it becomes moist œdematous and less red. The hoarseness has nearly all disappeared. The patient has gained in weight, and when observed in February last seemed to have nothing more the matter with the larynx than the expected sequelæ of a gumma.

Dr. Wright has kindly given me his observations upon the case, which are as follows:

In the case of Mr. Smith, which I had the opportunity of studying with you, it seemed to me at the time we first saw him that the diagnosis lay between syphilis, tuberculosis, and a neoplastic growth of the laryngeal ventricle, probably, if malignant, an adenocarcinoma. The diagnosis could only be arrived at by a method of exclusion, with the tacit understanding that syphilis can never be excluded in such cases, but the other affections sometimes can be. We were embarrassed, as is always the case in affections of the laryngeal ventricles by the impossibility of removing any tissue for microscopical diagnosis. As I remember it, the case came to you from another doctor who had given mixed treatment without avail. A globular swelling projected into the larynx from the region of the right ventricle, and the right cord was markedly reddened, with limitation of movement to only a slight degree.

In the absence of constitutional symptoms other than some loss of flesh and some rise of temperature in the afternoon, not of a tuberculous character, it seemed fair to exclude the usual forms of laryngeal tubercle, but it was impossible to say the man did not have that rare form of it described clinically as tuberculoma.

It also seemed unlikely, and this became an increasingly strong assumption in the course of our observation, that even the slow growing adenocarcinoma, the form usual in the laryngeal ventricles, would progress more rapidly than this swelling gave an indication of having done since his history first began. His age was decidedly against the supposition of this form of laryngeal cancer, as indeed it is unusual in any form at his age.

The supposition that it was a syphilitic lesion, originally gummatous, seemed irreconcilable with the vigorous and various forms of administration of antisyphilitic treatment which resulted in no diminution of the growth. Assuming, however, that we might have a gummatous inflammatory condition which had resulted in a superficial necrosis of the thyreoid cartilage, probably accompanied by a calcareous condition of the sphacelus which was acting as a foreign body, the clinical course seemed much less inexplicable than with any other conception. Had we not this idea in our minds, the hæmoptysis which occurred would have confirmed us in the diagnosis of tuberculosis.

*Read by title at the Thirty-second Annual Congress of the American Laryngological Association, held at Washington, D. C., May, 1910.

perhaps, in spite of the fact that examination of the larynx, immediately subsequent to that event, showed a marked retrocession and retraction in the region of the former swelling, uncovering, and making the cord on that side broader. An interesting and confusing phenomena in the course of our study of the case was the remarkable variation in the state of the vocal cord, which still persists, I think. I am of the opinion that the process in the ventricle and its subsequent tissue change interfered with the vascular and lymphatic supply of the cord in a way that we easily imagine to account for it.

With a definite history of syphilis any laryngeal involvement accompanied with some of the symptoms of syphilis is ordinarily diagnosticated as specific. But when antisyphilitic treatment has been persisted in for a year and the lesion has not been influenced thereby, but, on the contrary, has assumed more alarming conditions, then the previous history of syphilis materially complicates the diagnosis. In this particular case the previous history, the unusual redness of the mucosa, and the manner of invasion seemed to indicate syphilitic involvement. When observed later, and there appeared a globular mass projecting from the ventricle, marked emaciation, a morning and evening cough, a rise of the temperature in the evening, though not typical; night sweats, pain on swallowing, and slight hæmoptysis, there seemed no doubt that the lesion was tuberculous. But the examination of the chest and of six specimens of sputa resulted negatively, so that tuberculosis seemed reasonably excluded. The continued growth of the tumor, the slight paralysis of the cord, the pain on swallowing, the moderate glandular involvement, and the location seemed to favor a malignant neoplasm of the ventricle, but the slow growth of the tumor and the age of the patient both argued against malignancy. Every possible means of diagnosis was employed except the removal of a piece for examination, which procedure would have necessitated cutting deeply beneath the mucosa to obtain a satisfactory specimen. I should not have hesitated to have operated externally and attempted to remove the growth without entering the lumen of the larynx, had there not seemed strong probability that the growth was a tuberculoma or a gumma, an operation for either of which was, in my opinion, contraindicated. When the hæmorrhage occurred Dr. Wright felt strongly convinced that the growth was syphilitic, and that the offending cartilage had probably been expelled, which opinion was clearly substantiated by subsequent events.

Up to this time there had been no evidence of an external destructive process, although it is usual to find some break in the continuity when the syphilitic lesion has existed for a long period. The peculiar anatomical arrangement of the mucosa of the laryngeal ventricles in folds admits the extension of a large growth into the larynx, either specific or malignant, without giving more external evidence than a globular projection with an even unbroken surface, with more or less tension of the mucous membrane.

This condition being present without any ulceration lessened our belief in its being specific. After the assumed expulsion of the offending cartilage there was marked retraction of the ventricle, which permitted more of the cord upon the affected side to become visible than could be seen of the one opposite. This was probably the result of fibrous contraction following a destruction of tissue.

Although all of the true cord could be seen with the mirror, it would undergo queer physical change even while examining it. Upon first looking at it, an almost normal appearance was noted, but upon phonation it would become puffy, less red, and apparently mucus soaked. This condition has been explained by Dr. Wright as a disturbance, probably, of the vascular and lymphatic supply of the cord, which still existed when the patient was last seen.

44 West Forty-ninth Street.

A CASE OF CONCOMITANT EPIGASTRIC HERNIA AND GASTRIC ULCER.

By Horace W. Soper, M. D.,
St. Louis.

Ury (1) has recently called attention to the relationship existing between epigastric hernia and ulcer of the stomach. He reports two cases and cites records of three others occurring in Boas's Poliklinik between the years 1899 and 1909. In all these cases the hernia appears to have been a factor in the development and course of the ulcer.

In 1902 Strauss (2) reported four cases and expressed the opinion that the continual pull exerted by the hernia on the stomach wall was responsible for the development of the ulcer.

Kelling (3) thus explains the probable nervous mechanism involved in the production of the ulcer: "The tension of the hernia irritates the sensory nerves of the stomach wall, a secondary stimulation of the sympathetic ganglia results, impulses are originated which produce a narrowing of the arteries; the circulatory changes in the submucosa account for the development of the ulcer, or prevent the healing of one when originated by other causes."

Epigastric herniæ occur through small slits (almost invariably transverse) in the linea alba between the xiphoid appendix and the umbilicus. They consist of the greater or lesser omentum enclosing small masses of fat varying in size from a pea to a walnut. Very rarely is a gut involved.

The ætiological factors are probably heavy lifting, severe coughing and straining, and trauma. Many herniæ give rise to no symptoms. Others cause severe epigastric pain, especially during strong contractions of the abdominal muscles while the patient is in the erect posture. As a rule, immediate relief follows when he lies down.

Paul Cohnheim (4) suggests the possibility of the hernia being mistaken for gastric ulcer, particularly those cases in which the lesser omentum near the pylorus is involved. The symptoms then closely resemble those of ulcer. The pains, occurring regularly two to three hours after meals, are probably produced by the greater tension exerted on the omentum by the strong contractions of the pars pylorica which occurs at this time.

Ury also emphasizes the possibility of the hernia being overlooked and a false diagnosis of ulcer made.

Capelle's (5) postoperative study of twenty-seven cases of epigastric hernia in the Breslauer Surgical Clinic is very significant. In nine patients perfect cure resulted; in six the rupture recurred; in twelve

good anatomical results were secured, but the gastric symptoms persisted. Therefore some cause other than the hernia was responsible for the symptoms (probably ulcer). He concludes that each case of operation for epigastric hernia should include exploration of the stomach.

Case. March 11, 1909. Mrs. H.; housewife; æt. forty-four. Father died of appendicitis, æt. seventy-four. Mother died of cancer of stomach, sixty-four years of age. Our patient had had no serious illnesses; no pregnancy; no menstrual disorders. Health had been always good until fourteen years ago when she was operated upon for hæmorrhoids and fistula. Stomach trouble developed soon after. Symptoms were distress and burning sensation accompanied by eructations of gas and acid tasting liquids, attacks lasting from few minutes to several hours, and were usually relieved by taking food. Occasional vomiting occurred of very acid mucous and food particles. Patient often had attacks in early part of the night. These symptoms, with remissions and exacerbations persisted. During the past year more severe attacks of pain and vomiting frequently occurred.

Physical examination: Height, five feet four inches; weight, 196 pounds. Good strong musculature, very fat patient with ruddy complexion. Heart and lungs presented normal findings. Reflexes were normal. Abdomen presented very large fat deposit. Tenderness over cœliac axis and in median line just below the ensiform cartilage. No dorsal points of tenderness.

Ewald-Boas test breakfast: fifty c.c., chyme good; considerable stomach mucus. Hydrochloric acid, 53. Total acidity, 71. No lactic acid. No sarcinæ. Few fat droplets. Starch amydulin. No occult blood.

Fasting stomach: Forty c.c., clear light yellow fluid; hydrochloric acid, 71; total acidity, 81. No food particles. No occult blood.

Fæces in general diet showed occult blood, positive.

Diagnosis of gastritis hyperacida with suspicion of gastric ulcer was now made, and bland, meat free diet prescribed. Prompt amelioration of the symptoms resulted.

April 11, 1909: (One month later). Relapse after eating coarse food. Upon examination an epigastric hernia was found in the median line below the ensiform appendix, irreducible, tender to pressure. It contained no air holding tissues. The intercostal nerves of the left side were markedly tender in several spots. A few herpetiform vesicles observed near the angle of the scapula.

May 8, 1909: Vomited supper twice during past week relieving pains thereby.

May 15, 1909: Subjectively, patient felt better. Adhered to bland diet. Fæces showed no occult blood.

May 20, 1909: Patient ate coarse vegetables. Pains were somewhat increased. Fæces show strong occult blood reaction, no muscle fibres.

June 5, 1909: Eating lettuce salad caused a severe attack, finally relieved by vomiting. Fæces, two days later, showed strong occult blood reaction, no muscle fibres. Gastric ulcer was now positively diagnosticated. The pains were absent while a bland diet was followed, always recurring when coarse vegetables or meats were eaten. This occurred quite often as she declined to abstain therefrom. It was also impossible to keep her in bed more than a week at a time. Operation was advised but refused. During the months of July, August, September, and October the history was very similar to the foregoing: Her weight oscillated between 186 and 196 pounds. Finally, on November 13, 1909, she was seized with a severe attack following a meal of pork and sauerkraut. The epigastrium was very tender to pressure, the hernia extremely so. Despite strict ulcer cure régime the pains and vomiting persisted. On November 26th she was sent to St. Anthony's Hospital and operated upon by Dr. Willard Bartlett. The hernia consisting of a thin band of the lesser omentum containing a mass of fat about the size of an almond was removed. The stomach was explored and a slightly indurated ulcer of about the size of a silver half dollar was found in the middle of the lesser curvature in the anterior wall. Incision closed. The patient was kept in bed for four weeks under strict bland diet. Recovery was interrupted by an attack of grippe occurring in January. Since then, uneventful. No recurrence of the hernia, pain, or gastric distress.

A separation of the subjective symptoms produced by the ulcer from those caused by the hernia does not appear possible in this case. The presence of the hernia might have hindered the healing of the ulcer, as the patient, always intractable to dietetic restrictions, has been even less careful since the operation than before, with no return of the symptoms; while prior to the operation the slightest deviation from a diet of soft foods caused distress and pain.

To conclude: Epigastric hernia should receive more consideration than has been hitherto accorded it.

In all cases of epigastric pain the possibility of hernia should be borne in mind.

The presence of an epigastric hernia accompanied by epigastric pain should excite suspicion of an ulcer of the stomach. All such herniæ should receive surgical treatment. The operation should include exploration of the stomach. If an ulcer is found it should be dealt with according to the indications presented to the surgeon.

Epigastric hernia not producing symptoms should probably receive operative treatment, thus eliminating a possible disturbing factor in the future life of the patient.

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625 Metropolitan Building.

LANE'S CONCEPTION OF CHRONIC CONSTIPATION AND ITS MANAGEMENT.*

By A. B. Cooke, M. D.,
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Chronic constipation is undoubtedly the commonest and most widely prevalent of all human ailments. It is also, perhaps, the least understood. Countless theories, many of them bizarre and fanciful to the point of absurdity, have been promulgated upon the subject and the volume of literature pertaining to it is exceeded, probably, by that of no other single complaint. Yet it remains a subject of perennial and inexhaustible interest, and must continue so because the factors concerned in its evolution are as numerous and variable as the individual constitutions, environments, and habits of life of the several members of the human family.

In his most interesting monograph entitled *The Operative Treatment of Chronic Constipation,*[1] Mr. W. Arbuthnot Lane approaches the subject by deploring the inadequacy of medical terminology and

*Read before the American Proctological Society, St. Louis, June 7, 1910.

[1]London: James Nesbit & Co., Limited, 1909.

defining the scope of the treatise in the following introductory paragraph:

The term "chronic constipation," as generally used, does not include all the conditions which I intend it should here. These conditions are the consequences of the accumulation of material in the intestinal tract for a period sufficiently in excess of the normal to produce on the one hand, alteration in the gastrointestinal tract and in other viscera, and on the other hand toxic changes from absorption. While in the large majority of cases the patient suffers from constipation in the ordinary acceptation of the word, associated with very infrequent hard motions, in a fair number there is a daily action, and in a small proportion the motions are loose and frequent. The last feature is particularly the case when the dilated and obstructed colon has been infected by organisms other than those that exist normally in it, with the occasional development of mucous, membranous, and ulcerative colitis in their various forms. I thought of substituting 'chronic intestinal stasis' for 'chronic constipation,' but to this there are many objections. I am, therefore, retaining the title, fully conscious that it is not sufficiently comprehensive, because I do not know a better one to describe the pathological sequence to which I wish to call attention

The two chief pathological factors concerned in the production and maintenance of chronic constipation, in the larger sense in which the author employs the term, are enteroptosis and acquired mesenteries or adhesions. "These adhesions," it is held, "do not result from inflammation, but are developed to oppose the displacement of viscera, the tendency to which exists whenever the erect posture of the trunk is assumed." It is a rather startling suggestion that adhesions can exist without inflammation to produce them or that mesenteries may be "acquired." Yet, if inflammation is restricted in its application to pathological processes which manifest themselves in recognizable symptoms, there is abundance of evidence, clinical and post mortem, to support the contention. However he may have regarded them, every surgeon of large experience in abdominal work has observed these structures in the region of the appendix in cases which had presented no symptoms referable to that locality and, post mortem, they have been observed and described many times in subjects whose histories gave no intimation of abdominal trouble of any kind during life. This basic feature of Lane's theory cannot, therefore, be lightly rejected because of inability to reconcile it with preconceived ideas, or because it happens to be outside one's personal experience and power of comprehension.

After emphasizing the self evident fact that in the erect attitude of the trunk characteristic of civilized man during his waking hours there is a tendency to the downward displacement of the viscera, which tendency under favorable circumstances develops into a confirmed condition, the author proceeds to describe the changes produced in the intestinal tract itself and to discuss the mechanics of the resulting defective drainage. Wherever possible without too great elaboration I quote the language of the monograph.

The earliest and most conspicuous changes take place in the large intestine, which is practically the cesspool of the system, and these are most apparent in the first instance in its cæcal portion and gradually extend to its termination.

The cæcum becomes dilated and elongated, so much so that, when distended, it occasionally fills the entire pelvis, displacing and compressing the viscera which normally occupy this space.

The portion of the cæcum above the brim of the pelvis, together with the ascending colon, is retained in a position of abnormal fixity to the posterior wall of the abdomen. This is effected by the development of adhesions between the outer aspect of the large bowel and the peritonæum covering the abdominal wall in its vicinity. In advanced cases these adhesions are supplemented by a mesentery in which vessels of some size are contained. These adhesions or acquired mesenteries are the materialization in peritoneum of lines of force. . . . The adhesions merely fix the bowel, but occasionally they constrict its lumen very materially in one or more situations and render it liable to become obstructed. Not only do the adhesions anchor this part of the large bowel, but they also bind down to the iliac fossa a proportion of the appendix. They usually attack about a half or a third of its proximal portion, often terminiating below in an abrupt, free margin, or forming a pucker in its normal mesentery. . . .

The upper limit of the ascending colon is abnormally fixed and occupies a higher position than in the healthy subject. This is produced by the contraction of an acquired band of peritoneal adhesions, which drags the flexure upwards and helps to oppose the downward displacement of the large bowel. . . .

Associated with the fixation of the cæcum and ascending colon and the consequent limitation in its free functioning there is much wasting of the involuntary muscle wall.

The transverse colon forms a loop with its convexity downward, and the degree to which this descends varies. A portion of the loop frequently occupies the true pelvis, reaching quite to its floor, where it disputes possession of that cavity with the cæcum which has usually occupied it previously.

. . . The splenic flexure is also dragged upward and backward in an abnormal manner by hypertrophy and contraction of the pleurocolic fold, supplemented by other peritoneal bands of new formation, developed with the object of sustaining the strain on this flexure exerted by the loaded transverse colon in the erect position of the trunk.

Where the descending limb of the transverse colon comes into contact with the ascending colon and cæcum adhesions unite them directly to one another, while below a mesentery of variable breadth connects them indirectly. The same formation exists on the left side between the ascending loop of the transverse colon and the descending colon.

The presence of these mesenteries and adhesions renders any return of the transverse colon to its normal level impossible, while its further descent is favored by their progressive contraction.

The descending colon is fixed in a manner similar to the ascending colon by adhesions and mesenteries attaching its outer surface to the peritonæum covering the adjacent abdominal wall. . . .

. . . Owing to the possession of a mesentery of some considerable length, the (sigmoid portion of) bowel is at a much greater distance from the abdominal wall than the cæcum and ascending colon, which are immediately adjacent to it, and the mode of fixation differs somewhat in detail from the last described. The outer surface of the mesentery is gradually brought down to its base by the formation of adhesions, till the wall of the sigmoid itself becomes secured to the floor of the fossa. . . .

Associated with the progressive fixation of the sigmoid loop there is a diminution of its lumen and of its length, so that the bowel, which normally forms a loop of considerable size, moving freely at the end of a long mesentery, finally becomes telescoped as a short, straight, constricted tube, attached by a considerable area of its circumference to the abdominal wall quite devoid of any mesentery. . . .

The fixation of the sigmoid by the acquired adhesions may be of such a nature as to narrow its lumen in one or more places to such an extent that symptoms of obstruction may arise. This results from a failure of many of the bands of adhesion to secure a continuous grip upon the whole length of the mesentery of the loop. In consequence the part, or parts, of the sigmoid which have become effectually anchored form kinks or obstructions, while the rest of the loop is distended. . . .

Owing to the bowel having escaped beyond the control of adhesions, except at its commencement and termination, the sigmoid, instead of becoming shortened, atrophied, constricted, straightened, and fixed, may become very much more elongated, dilated, and mobile than normal, its muscular coat being correspondingly hypertrophied.

At the same time the extremities of the loop held in the grip of adhesions are closely approximated, while the lumen of each is constricted, especially when the loop is distended with fæcal matter. This approximation of the extremities of the loop greatly facilitates its rotation (thus favoring volvulus and obstruction). . . .

The rectum is usually elongated, dilated, and free from any abdominal adhesions. Its muscular coat is hypertrophied.

Thus does the distinguished author describe the gross changes produced in the several portions of the large intestine. The effects of such changes must be obvious to all. The colon may well be termed the sewer segment of the intestinal canal, the physiological function of which is not only directly antagonized, but in consequence, the absorption of toxic material from the retained excrement is rendered inevitable. In addition, secondary changes in the various other abdominal viscera occur. The appendix becomes fixed, constricted, congested, and often acutely flexed by the formation and contraction of the adventitious adhesions so that drainage is impossible and a state of inflammation of varying intensity ensues. When the cæcum is prolapsed into the pelvis the inflammation of the appendix may extend into the right tube and ovary, resulting in serious damage to these organs and giving rise to much suffering at each menstrual epoch. The stomach is drawn downward by the weight of the displaced and overloaded transverse colon, resulting in gastric dilatation with its well known train of evils. Traction upon the stomach may be transmitted to the gallbladder or pancreas leading to congestion and infection of these organs. The kidneys are usually abnormally mobile, due partly to the direct pull upon them by the sagging colon and partly to the loss of support incident to the disappearance of fat characteristic of these cases. In long standing cases a condition of general enteroptosis is likely to be present.

The ovaries, more particularly the left, are very apt to suffer, becoming fixed in adhesions and undergoing cystic degeneration. The breasts also may develop cystic changes, owing possibly to their intimate functional association with the ovaries.

PATHOLOGY.

The overloading affects, in the first instance, the cæcum and ascending colon, distending the sac, stretching, and possibly, to some extent, inflaming its coats. During the period, in which the individual occupies the erect or sedentary posture, material tends to stagnate and accumulate in the cæcum and ascending colon. It produces a gradually progressive distention, so that the cæcal extremity descends downward and inward into the true pelvis and exerts strain upon the attachment by peritoneum of the bowel to the iliac fossa and loin externally, and especially upon the hepatic flexure. The strain on the flexure in this position after a time renders it difficult or impossible for fæcal matter to pass the flexure. The interference with the lumen of the bowel at the flexure is increased if there is also a quantity of fæces accumulated in the transverse colon. After a time material discharged from the small intestine into the cæcum and ascending colon may continue to occupy and distend these portions of the large bowel the whole day, and it is only when the supine position is assumed at night that the mechanical conditions render the flexure pervious and gravity assists in their evacuation. The same applies in a lesser degree to the splenic flexure.

In the case of the vertical and transverse portions of the large bowel, the weight is distributed along the adhesions and bands which extend from the outer surface of the transverse colon to the vertical portions, and from them to the adjacent abdominal wall, fixing them and pinning the flexures abnormally high up in the loin. The transverse colon drags upon the stomach, tending to pull it downward. This tendency is opposed by the thickening and shortening of the right margin of the lesser omentum, supplemented by the formation of bands or adhesions which extend from the under surface of the liver and gallbladder to the upper border and anterior surface of the pylorus and adjacent portion of the duodenum, and which hold up and fix these structures at an abnormally high level.

In consequence of the drag exerted by the bowel on the convexity of the stomach and the upward displacement and fixation of the pylorus, this organ experiences a progressive difficulty in emptying its contents while the erect position is assumed, and dilatation ensues. The stagnation of the gastric contents produces a change in the character of the gastric secretion, which may cause ulceration of the mucous membrane of the stomach or of the duodenum. The coats of the stomach also may become more or less inflamed. . . .

It is also probable that the condition of autointoxication present renders the mucous membrane less resistant than normal to the irritating action of the contents of the stomach delayed for an excessive period of time.

If simple ulcer is due to these causes malignant disease results from it indirectly, since a carcinomatous state is so frequently a sequela of a simple ulcer.

SYMPTOMS.

The symptoms may be roughly divided into two classes: Those produced mechanically by the changes in the gut, as previously described, and those due to the absorption of toxic elements from the retained matter. Clinical identification of the symptoms as belonging strictly to one or the other of these groups may not be possible in every case, but in the abstract their separate classification is entirely practicable.

Obviously the symptoms of the first group will be expressed largely in pain and perverted function, the character of which will be determined by the organs involved and the extent of their involvement. The possibilities in this connection have already been sufficiently indicated.

The symptoms resulting from the absorption of toxic material may appear in any or all of the structures of the body. They include degenerative changes in the heart and bloodvessels, cold, clammy hands and feet, indigestion, anæmia, muscular wasting, disappearance of fat from the tissues, loss of weight, staining and even pigmentation of the skin, marked mental depression, faintness, giddiness, neuralgia, headache, etc.

The presence of toxic materials in the circulation diminishes the resisting power to the entry of organisms, and so renders the sufferer a more ready victim to tubercle, rheumatoid arthritis, gout, and other diseases. Gastric and duodenal ulcers are not infrequent complications. How far these are due to diminished resisting power due to autointoxication and how far to dilatation and impaired functioning of the stomach and duodenum is difficult to say, but I have no doubt both these factors play an important part, both direct and indirect in their causation. The examination of a large number of cases of tuberculous disease of joints will show most distinct evidence of autointoxication due to chronic intestinal stasis which has clearly antedated, and was largely responsible for, the development of tubercle from its depreciating influence on the vitality of the tissues. In some cases the tissues are unable to resist the entry of the organisms thriving in the decomposing food about the teeth. The gum about the lower incisor teeth is the first to show this change. Infection of the gums, with destruction of the teeth and inflammation of the lymphatic tissues in and about the mouth and pharynx, serves to increase the gastrointestinal disturbance by pouring deleterious matter into the stomach and by fouling the air entering the lungs. The flesh, when incised, has a disagreeable earthy odor. This is particu-

larly noticeable in operations on the abdomen where a large area of peritonæum is exposed.

Of the symptoms directly connected with the eliminative function of the intestinal canal the author says:

> While in the large proportion of cases of sluggishly acting gastrointestinal tracts constipation exists in varying degrees of severity, a certain number of patients obtain a daily evacuation, a surplus being discharged daily from an overloaded cesspool. In an even smaller proportion of cases diarrhœa may exist, the patient having several fluid and often offensive evacuations, one following immediately on a meal, or there may be alternating periods of constipation and diarrhœa. The diarrhœa may be of a very irritating character, and much mucus, or even mucous casts, or blood may be present in the motion. Indeed some infection of the colon is not a rare complication.

It is apparent that according to Mr. Lane's teaching a proper conception of diseases of the appendix, gallbladder, stomach, duodenum, pancreas, kidneys, ovaries, etc., in many cases requires that they be regarded as sequelæ of chronic constipation. In such event the symptoms of these diseases must of course be interpreted as, in an important sense, referable to the primary causative factor.

TREATMENT.

It is much to be regretted that Mr. Lane's monograph is limited to the consideration of the operative treatment. That he recognizes the value of nonoperative measures, however, is clearly indicated by the following terse paragraph with which he opens the discussion of treatment:

> In no circumstances should operative interference be contemplated till the surgeon has satisfied himself that every means of treatment has failed, whether medical or mechanical.

This sentiment is in entire accord with statements made to me personally during the summer of 1909. On more than one occasion I heard him emphasize the benefit to be derived from properly applied mechanical support, particularly in the early stages of the trouble, and speak in detail of the special abdominal corset he had found most useful. The statement, then, which has been made repeatedly and published during the past year, without qualification of any kind, that "Lane advocates the removal of the colon for constipation" does him a gross injustice, and I am glad of this opportunity to place the truth of the matter on record.

The author writes at length and most entertainingly of the surgical treatment. Briefly summarized his views are as follows:

In the milder type of cases in which nonoperative means have failed to afford relief the division of all constricting bands and adhesions together with careful attention to the bowel function may prove effective.

In the severer cases more radical surgery will be required. This consists in dividing the ileum three to five inches from its junction with the cæcum and anastomosing the proximal end with the sigmoid or upper rectum, thus short circuiting the fæcal current and eliminating the possibility of further toxic absorption.

When pain is a prominent factor it is often necessary in order to secure complete and permanent relief to remove the colon in part or in whole, preferably the latter. This is usually best undertaken in two stages, the division and anastomosis of the ileum being first done, and at a subsequent date when the patient has gained sufficiently in strength, the extirpation of the colon, if the pain persists in such degree as to justify it.

The secondary changes of other viscera may also require surgical attention the nature of which will vary from simple removal of the appendix to nephropexy, gastroenterostomy, etc.

No attempt is made to minimize the seriousness of such operations, especially in the class of cases for which they are advocated; but it is contended that the condition of these patients is so abjectly miserable as to warrant any measure which holds out a reasonable promise of relief.

Now, what may I venture to say by way of personal comment upon this theory and the therapeutic recommendations growing out of it? This much at least, that they are entitled to our earnest, open-minded consideration not only because of the eminent source from which they originate, but also because of the painstaking thought and labor devoted to them and the evident conviction and candor with which they are presented. Revolutionary? True. Radical? Yes, from the old accepted point of view. But I am not alone, I am sure, in the feeling, to which I freely confess, that the ordinary conception of chronic constipation and its management has long been far from satisfying. And I hail with real delight any contribution which undertakes to illuminate the vexed problem, even though the limitations of my own experience do not furnish the necessary basis for its full and ready acceptance.

Through the fine courtesy of Mr. Lane I was given the opportunity last summer of studying a series of operated cases in the wards of Guy's Hospital. In the majority the short circuiting operation (ileosigmoidostomy) had been done; in two or three the colon had been extirpated. With a single exception the condition of each patient showed ample evidence of established convalescence,—absence of fever and pain, cheerfulness, and the general appearance of returning health. In the case noted as an exception the operation had only been performed a few days before.

A fair estimate of the benefit obtained and to be expected in these cases was only possible in the light of the previous histories. This I took pains to elicit in every case. The patients were all women, and, judging from their own accounts, more forlorn and wretched specimens of humanity would be difficult to imagine. While I realize that the data were insufficient to justify a positive opinion, I must admit that the impression of the work I received on that occasion was altogether favorable. And as I have since pondered over the underlying theory and critically read and reread the monograph, of which this paper is largely a mosaic of quotations, that impression has been strengthened and confirmed. Where there is so much grain, of course there must needs be some chaff. But when the winnowing is complete, when ridicule has given place to reason, and fact has been separated from fancy, I believe that Mr. Lane's conception of chronic constipation and its management will be found to be the most nearly correct in principle and practice of all the numberless "new views" with which the literature of the subject is burdened.

Jackson Building.

MEDICAL THEORY AND PRACTICE OF THE NATIVES OF THE HEART OF AFRICA.

By John Knott, A. M., M. D., Ch. B., and D. P. H. (Univ. Dub.); M. R. C. P. I., M. R. I. A.; etc.,

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The tsetse fly and the trypanosome have succeeded by their pathological partnership in giving a new interest to the circumferential border of the Victoria Nyanza. That wonderful body of water which now "seems so near," and was but half a century ago "so far" and so unattainably remote as almost to rival in the mystery of its dimensions and properties that of the Martian canals of the present day, is now associated with clinical facts and theories which present absolutely novel aspects of the modern struggle between science and disease. The associations of these facts will doubtless have the effect of giving a special interest to a passing discussion of the medical methods of the primitive peoples of the vast, and even recently so gloomily mysterious, interior of the "dark continent." There are but few subjects, perhaps, of those now within easy reach (and presenting the unwonted aspect of primitive freshness) and provided on a scale of exceptionally large dimensions, which can be made to illustrate so copiously, and so luminously, the gradual growth of human opinion (and even the dawning of human intelligence) in its most mysterious and characteristically emotional aspects, as a study of the now rapidly increasing data of the native medical theories and practices in Central Africa.

The people who occupy the territory which abuts on the western margin of the broad expanse of the Victoria Nyanza, and which includes a large section of the tropical area of the continent, are known as the Baganda. The name was relatively new to Anglo-American readers till the late Sir Henry M. Stanley successfully led the Emin Pasha Relief Expedition across Equatorial Africa; and an undying medical interest was conferred upon the same by the publication of Surgeon Major Parke's *Personal Experiences* of that long and weary pilgrimage through the depths of virgin forests and along pathways previously untrodden by the feet of white men. From their territorial importance, the Baganda are more than likely to contribute largely to the making of the future history of the progress of British civilization in Central Africa. Ethnologically, they are negroids. Philologically, they are of the Bantu family. Physically, they are a fine race; many of the men stand over six feet in height. Æsthetically, they are conspicuously graceful, both in figure, in natural pose, and in their various movements. Intellectually, they are both willing to learn, and quick in the acquisition of knowledge. By free intermarriage with women of the neighboring tribes they have greatly improved the general type. Specimens of the heavily stolid, unintellectual negro are much more rare among them than in the case of most of the other Central African tribes. Thus has their vast territory of Uganda promptly fallen into line in the march of civilization!

Those so long untutored people of the equatorial section of the mysterious continent have, as would naturally be anticipated, many peculiar notions of their own in regard to the phenomena and conditions of disease and dissolution. To their primitive comprehension there is no such thing as natural death. Both disease and dissolution are, in every instance, a result of the active influence of some unfriendly spirit. The afflicted individual may by his own action evoke the hostility of such spirit, or the malicious activity of the latter may have been called into play by some evil minded acquaintance who has borne him a grudge. Their system of prognosis, as well as that of their treatment, is, as might naturally be expected, too, one which presents very peculiar notions, of their own fertile invention; and is loaded with peculiarly complicated details. Of course, whenever a case of sickness occurs, the relatives of the patient proceed to ascertain the cause. For this very essential information they apply to the priest or medicine man, who in turn resorts to the possible enlightenment of one of three oracles. At the opening of one of the forms of procedure, he brings forth to view a strip of cow's hide four feet in length and eighteen inches in width, which he spreads flat on the ground—with demonstrative care. He stands at one end, while the suppliant kneels at the other. He has by him nine pieces of cow (or buffalo) hide, each four inches long, by two and one half inches wide; one of these has a number of cowrie shells stitched on, while the other eight are plain. He holds in his right hand a stick of two feet in length, and furnished with a (natural) crook at the end; with this he catches his cowrie shells, and draws them toward him after having projected them promiscuously forward on the leathern slip placed before him. When everything has been duly made ready for the opening of the oracular performance, the suppliant pays down nine cowrie shells; nine is the sacred number of this primitive people. He then states the conditions and aspects of the case of the patient for whom he has come to seek the assistance of the wise and holy adviser. The latter then proceeds to take up the cowries in one hand, and throw them forward on the leather, carefully noting how they fall. He then hooks them toward him with the curved end of his staff, and repeats the actions several times; rehearsing each time the principal symptoms of the case regarding which he has been consulted. When he has so far satisfied himself, he takes up his hooked staff of sacred office and hands it to the suppliant. Then addressing himself solemnly to the latter, he asks what the symptoms of the case are—and proceeds to recapitulate the same, as detailed to him. By placing his hallowed staff of oracular office in the hand of the suppliant, he has put the latter on his honor, to give a true, faithful, and full account of the case. The priestly medicine man then goes once more through the details of the process of casting the cowrie shells, as a necessary preliminary before delivering his final decision. In some cases, the suppliant is sent to another medicine man, because the particular spirit who has wrought the mischief happens to be one over which the first has no control. Where no such complication exists, the latter prescribes herbal remedies, to be applied either externally, or internally, or both—according to the exigencies of the case.

When it happens to be one of the mighty and

wealthy members of his *clientèle,* the sick person is first asked for a specimen of his saliva. This is received on a strip of plantain leaf. Some animal—goat, cow, or fowl—is then forced to swallow it. After an interval, the medicine man solemnly proceeds to open the body of the animal so infected—by a vertical, longitudinal, incision reaching from the mouth to the stomach. The viscera are then subjected, *seriatim,* to a most careful ocular scrutiny; every mark and spot is noted and counted. If the total number of the same turns out to be odd, the patient will be sure of recovery; if even, death is inevitable. The existence of but a single macula or pimple is of excellent augury: such invariably presages long life and good health. A portion of the viscus which is marked by a notable spot is cut out, dried, stitched in a tiny leather bag, and worn by the affected person round the neck as an amulet, to ward off physical evil for the remainder of life.

There is also a water test. The medicine man brings a pot of water, into which the patient is made to expectorate. Some dust, formed of dried and powdered herbs is then thrown on the surface of the water, and the medicine man proceeds to roll the pot from side to side. If the floating layer of dust breaks up into an odd number of parts, the omen is favorable; if into an even number, the forecast is gloomy. When the prognosis has thus been given, the case is prescribed for. Herbs are very generally employed. Sometimes a special procedure will be found necessary—for the purpose of appeasing, or securing the special services, of a spirit of very particular importance, or of rare individual tastes, or of peculiarly acquisitive principles.

Throughout all the various parts of this wide expanse of territory the local deities will be found to have huts prepared for their residences; these, of course, also accommodate their officiating priests. Every native householder keeps near his own residence one of the diminutive domiciles in which the spirits of his deceased relatives reside. If a suppliant is sent for aid to one of the gods, he must always bring an appropriate offering—according to his means. The wealthy man brings a cow; the less opulent, a goat, a fowl, a goat's skin, a feather—in descending scale. But no candidate can present himself without some bark cloth and beer. A healing remedy of proportionate value is then prescribed. If the suppliant is sent to the hut of one of the spirits of his kindred, he kneels at the door and addresses the spirit inside; recounts the troubles which brought him there; then promises a present proportioned to the rank of the spirit, and proceeds to implore its assistance in counteracting the influence of the hostile spirit who has effected the evil in question. He pours some beer on the door step, and solemnly enunciates the (Baganda equivalent of the) following words: "I have stated my case. I will give you a present [here he mentions what he purposes to offer]; now let him who overcomes drink." The quadruped or fowl which has been dedicated to the unseen power, is now turned loose in the enclosure which invests the hut, and is there retained as the property of the resident spirit. Also, it is replaced when removed by death. When the offering consists of skins, or feathers, they are tied to the door post; if of a bark cloth, it is placed within the hut—but is used temporarily to clothe the sick person, who thus is made the recipient of the salutary influence of the subsidized spirit.

It is occasionally found necessary, after failure of the best efforts of the medicine man who has been first consulted, to have recourse to the propitiatory offices of a priest of a higher order. In such cases, sacred etiquette requires that the special priest-medicine man consults the deity alone. He, accordingly, enters the hut, and informs the divine tenant who the suppliant is, and what the nature of the business which has brought him there to implore the assistance of the highest power. The mediator carries out this function by kneeling close to the reed wall which separates the *sanctum sanctorum* of the spirit from the rest of the house, and speaking through this partition to the divine tenant, who permanently resides in the "spirit room." At the conclusion of this preliminary introduction, which forms the prologue of the drama, the clerical guide goes out and brings in the suppliant who has been waiting. On entering, they kneel together before the partition, and the latter gives his own version of the details of the trouble which sent him there. When this detail has been carried out, the priest takes his pipe—well filled with tobacco—and "smokes it fiercely." This works him into a state of ecstasy in which he loses his identity—a display which makes us more "modern" practitioners suspect the dilution, or skilled adulteration of his "weed" with herbs of still more potent properties. In this condition he speaks in tones of loud excitement, very different from those of his average methods of enunciation. Those are easily recognized as the voice of the deity speaking through the person of his agent. (How cosmopolitan is the primitive prophetic instinct, and the methods thereof; and what a rare item of testimony to the common kinship of humanity is the production of this caricature of the practice of the inspired Pythoness of cultured, artistic, and philosophic Greece in the ages of its most exalted enlightenment, by and with the aid of the special methods of the primitive illiterate Negroid of the dark centre of the Dark Continent!!) The deity, in this state of transitory incarnation, explains to the suppliant the nature of the disease by which his client is affected, and also he prescribes the appropriate treatment, and gives all necessary instructions as to the details required in effectually carrying out the same. When the divine revelation has been fully enunciated, the priestly "medicine man" retires to the rear of the hut; where, after a short interval, he regains his individual personality and goes about as before. The same priest of the deity may not always be eligible as the efficient medium; a particular selection of the appropriate official must be carried out in some cases. In certain instances, indeed, the deity will be found to be represented by but a single priest to whom he makes known his confidential revelations; in such localities and cases, the clerical official always resides within the hut.

But the very special cases which call for troublesome and complicated consultation with the divine power are nearly always found to occur in the persons of female patients. In the case of males, it is nearly always sufficient for the priest to pay a per-

sonal visit to the patient's residence after the preliminary investigation, first referred to above. Then, on arrival, at the house of the sick man, the latter is carried gently out into the open; the "medicine man" proceeds to kill a cow or goat provided for the purpose, and catches the blood in a vessel. With some of this gore he sprinkles each door post. He then takes up a stout stick of three feet in length, fastens a bunch of grass to each end, places it across the doorway, and there sprinkles it also with some of the blood. The patient is then touched with some of the same fluid: on the middle of the forehead, on either shoulder, and on either leg—just below the knee, in front of the *ligamentum patellæ*. He is then set on his feet—if at all able to stand—with a bark cloth wrapped around his shoulders; and told to run as fast as he can, and jump over the stick in the doorway—allowing the bark cloth to fall off him as he does so—and make for his bed, at the highest velocity that he can voluntarily assume. During this performance, he must by no means look round; he is cautioned, on pain of death, to keep his eyes fixed on the bed—toward which he must move (or be conveyed) as fast as possible.

Another method of orthodox treatment consists in taking the sick man into the garden. The medicine man there and then cuts down a plantain tree. The trunk of the fallen tree is next carefully slit longitudinally to a sufficient distance, and the halves are kept separated so as to give sufficient room to allow the patient to pass between. The blood of the animal which has been sacrificed is then sprinkled thereon, and the patient passes, or is conveyed, between the halves of the trunk—his bark cloth garment being allowed to fall off in the transit. He then makes for his bed, with religious attention and promptitude, as in the other case. The medicine man then takes up the meat, the bark cloth, and the cleft plantain stem, and departs—in the direction exactly opposite to that in which the patient passed to his bed. The plantain he throws on one of the main roads, and he preserves the meat and the bark cloth—for his own private use. (A very human contribution to the ceremonial of the African practice of the healing art, surely!) One of the very poor, when stricken down by disease, and unable to pay even the fee of a single fowl for orthodox medical treatment, receives on such occasions the benefit of being sprinkled with a mixture of water and aloes.

A curious item of the clinical faith of the Baganda is, that the spirit of malicious disposition which causes sickness, without the special intervention of any living person, is believed to be usually the *aunt* of the patient—*on the male side*. Some of these are known to be exceedingly malignant, and are always producing attacks of sickness in the native home. In such cases, a reliable cure cannot be completely effected without catching and effectively destroying the spirit. This essential, and highly important, operation the medicine man carries out by bringing to the hut a cow's or buffalo's horn, into which he puts a cowrie or snail shell, with a plantain seed. He then attaches the horn to the end of a long stick, and proceeds to pass it upward along the central pole of the hut till it nearly reaches the roof. It is in this topmost central area of the interior of the hut that the malignant spirit of disease normally takes up his residence. He there works the stick, with attached horn, about and around, till the contained shell and seed emit a special squealing noise; such is known to the skilled ear as the voice of the spirit, which has got into the horn. The latter is then promptly lowered by the operator, who covers it with a piece of bark cloth, plunges it in a pot of water, and carries it off to the nearest river, where he effectively, and finally, submerges it. And if a river be not available, he carries the pot—with its mouth securely covered—to some unreclaimed grass land, where he leaves it to be destroyed by the next "prairie fire."

Baganda women are, of course, found upon special occasions to be possessed by troublesome spirits; the principal symptoms are abdominal pains and swellings. The proper remedy is to have the patient inhale the smoke of certain herbs as they burn on hot embers. The smoke is, of course, of a quality which the spirit cannot tolerate. The latter, accordingly, takes an abrupt departure to a less odoriferous locality. And, after all, does not this interesting procedure bear on its face the distinctive features of a therapeutic cousinship to the burnt feathers, burnt hartshorn, and asafœtida treatment of "fits of the mother" which prevailed so extensively in western Europe not so very long ago? Another illustration of the common kinship of man—and of (his superior partner) woman!

34 York Street.

THE SOUND BLOCK.

A Modification of the Neumann Lärmapparat, an Adjunct to Functional Tests of the Ear.

By E. T. Senseney, M. D.,
St. Louis,
Instructor in Otology, Washington University.

The chief difficulty in the functional tests of the auditory apparatus has been that of preventing the perception of sound by the ear opposite the one examined. In the differential diagnosis between diseases of the sound conducting and of the sound perception apparatus, where the results of the Weber, Rinne, and Schwabach methods often are conflicting and contradictory, we are unable to rely on the best and most accurate test, that of hearing for high and low tones, unless we can confine this test surely to the one ear. This is also true in the determination of the degree of hearing, especially in cases of severe unilateral deafness, for no matter how tightly the external canal is plugged, high tones and loud speech are still perceptible in the normal or better ear.

This difficulty is overcome by the use of the *Lärmapparat*[1] (noise apparatus), a modification of which is described below. The first instrument for this purpose was that of Barony; and consists of a watch or biscuit shaped case from the margin of

[1] *Lärmapparat* when translated into English is an unfortunate term, for, while its principle is that of a noise maker, its purpose is to block sound. Hence it seems to the author that the instrument should be known as the *sound block*, and that the ear pieces should be called the right and left sound blocks. This instrument was described before the Oto-Laryngological Section of the St. Louis Medical Society, January 26, 1910.

which projects a hard rubber nipple for insertion in the external canal. Within the case a hammer run by clock work strikes upon a sound disk, producing the noise which is carried through the nipple to the external canal. This instrument later was improved radically by Neumann, who produced an electrically operated *Lärmapparat*, consisting of two ear pieces (right and left) shaped much like the Siegel speculum, in the body of which are sound disks vibrated by an interrupted current furnished through a wall plate connected to the street current. Two types of the instrument are made; one for the direct and one for the alternating current. The wall plate is so constructed that the intensity of the noise can be conveniently and accurately controlled, and either right or left or both ear pieces can be operated at will. The principle of both the Barony and the Neumann instruments is the same; the external canal of the side not tested is plugged by the ear piece of an instrument which at once prevents the direct entrance of sound waves into the canal and also produces sufficient noise to effectually block the perception of any other sound, no matter how loud or of what pitch (—even when the source of the sound is in direct contact with the cranium).

In the modification of the Neumann *Lärmapparat* described in this article, the ear pieces or "sound blocks" used are similar to the hard rubber watch type telephone receivers, and are operated by a small portable faradic battery especially arranged for this purpose. The current is regulated by a rheotome, and by means of a three way switch may be sent to the right, left, or both sound blocks as desired.

The method of using the instrument is as follows:—Both sound blocks, right and left, are applied closely to their respective auricles with the minimum current running to both. Then with either a high fork (e. g., c4) or loud speech a test is made to see whether all hearing is entirely blocked. If either the fork or the voice is heard, the approximation of the ear pieces is looked to, and if necesary the amount of current is increased until the patient can no longer hear. Then the sound block is removed from the ear to be examined. (The current is at the same time cut off from the instrument removed, as its noise when not applied to the auricle is annoying and interferes with the hearing tests). For differential diagnosis the open ear is tested with tuning forks for the perception of high (c4) and low (C) tones; failure to hear the low fork bespeaking an affection of the sound conducting apparatus, and failure to hear the high fork disease of the internal ear. (This procedure, of course, is used in conjunction with those of Weber, Rinne, and Schwabach, and is not only diagnostic in itself, but is also a reliable check on the results of these tests). The degree of deafness may be determined in the usual ways—but with the absolute assurance that our tests are confined solely to the ear tested.

The sound block is presented with no claim of originality of principle, but seems to the author to possess the following advantages over the *Lärmapparat*:—

1. The sound blocks are more easily approximated to the auricles than the ear pieces or "hearers" of the *Lärmapparat* are to the external canal. (The difficulty in the latter case is the same as that experienced in the use of the Siegel speculum in abnormally shaped canals).

2. The instrument is better adapted to bedside use. It is small, light, and easily portable, and is not dependent upon outside source or quality of current supply. The electrical energy is self contained, and in this day of the automobile dry cells are readily procurable. As the instrument uses very little current, they are more economical.

3. There is no danger of electric shock to the patient. This is a feature of instruments connected to the main street current that cannot be overlooked, especially in testing suppurating ears where there is sufficient moisture to carry the current if a short circuit should occur.

308 LISTER BUILDING.

Our Readers' Discussions.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

C.—How do you treat œdema of the lungs? (Closed July 15, 1910.)

CI.—How do you treat chronic nasal catarrh? (Answers due not later than August 15, 1910.)

CII.—How do you treat other electric shocks than that of lightning? (Answers due not later than September 15, 1910.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED) *that the answers be short; if practicable no one answer to contain more than six hundred words.*

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The prize of $25 for the best essay submitted in answer to question XCIX was awarded to Dr. Louis J. Spivak, of Philadelphia, whose article appeared on page 220.

PRIZE QUESTION XCIX.

THE TREATMENT OF GONORRHŒA IN THE MALE.

(*Concluded from page 225.*)

Dr. Charles A. Cowell, of Syracuse, N. Y., remarks:

In the treatment of gonorrhœa in the male, we should bear in mind that we are dealing with a disease that under proper diet, rest, and hygiene, is self limited and will recover of itself spontaneously, in from three to eight weeks, without any medication.

For the purpose of the treatment we may classify the conditions under four heads: 1. The recent, or before the submucous tissue has become involved, and before any marked discharge has set in; 2, the acute; 3, the chronic; and, 4, the complications.

In the first case the patient presents himself with a history of a suspicious connection. No discharge is present, the lips of the meatus are reddened, and a slight tingling is felt on urination. If a little

mucus can be expressed a microscopical examination is made. This confirms the diagnosis. If circumstances permit the patient comes to the office twice daily and the interior urethra is irrigated with a warm solution of potassium permanganate, 1 in 5,000, using a quart of the solution in a gravity syringe and a blunt tip irrigator. If the patient is unable to visit the office, he is given a solution of silver nitrate, half a grain to the ounce, and he is instructed to irrigate the urethra after each urination with a two drachm syringe, with a blunt tip; further diluting the solution if it causes any smarting; and discontinuing when pain is felt on urinating.

A diet of bread and milk, butter milk, and some alkaline water is prescribed; all meats are forbidden, together with all forms of alcoholics. Internally, ten grains of sodium bicarbonate are given in a glass of water, night and morning.

The disease will either clear up or get rapidly worse in three or four days. If the former happens, the treatment is continued with weaker solutions for two weeks, at no time using them strong enough to cause any pain. If the latter the irrigation is discontinued, the soda is kept up in sufficient quantity to keep the urine alkaline to litmus. The diet remaining as before. The patient is warned to keep from all forms of sexual excitement. He is provided with a suspensory bandage, and a package of sanitary sacks. These latter are made of surgical gauze seven inches long by two and one half wide, with a slit half way down the centre of one side; these come a dozen in a package with a quantity of cotton and a safety pin. The patient is instructed to place a little cotton in the bottom of the sack and to pin the upper end to the suspensory band or under clothing. The whole to be burned when soiled and a clean one substituted. The patient is warned to on no account tuck cotton under the fore skin, as such a practice forces the discharge back and extends the inflammation posteriorly. He is instructed to drink large quantities of water, to sleep cool, and apply a cold compress or stand on the cold floor if chordee is present.

He is given two No. oo gelatin capsules filled with balsam of copaiba, three times a day, at meal time. If the stomach does not rebel this is increased to eight capsules a day. These he fills for himself at the time of taking. If the copaiba disagrees oil of santal is added with it or even substituted for it.

If all goes well and the case has not been mistreated and a posterior urethritis induced before he presents himself the discharge begins to lessen and the pain to cease about the third week. The same plan is continued, and about the fifth or sixth week only a morning drop or threads in the urine are left. This condition usually clears up also in two weeks more. The patient is usually anxious at this time. He is given a solution of zinc sulphate, five grains to the ounce, and instructed to dilute it so it will cause no smarting, and inject two drachms after urinating. These directions carried out prevent any of the complications. If complications arise they are usually brought about by wrong treatment, as advised by some friend or somebody's sure quick cure.

Improper injections cause prostatitis and posterior urethritis; many drugs, as, for example methylene blue, cause prostatitis; irritating injections increase the inflammation.

If phimosis is present the foreskin should be slit up on the dorsum under cocaine anæsthesia and the circumcision be completed when the gonorrhœa is well. It is sometimes necessary to enlarge a very small meatus in the same way. In the acute cases of posterior urethritis or prostatitis, apply an ice bag to the perinæum, and give salines freely, preferably the saline mineral waters. Internally salol, five grains, each four hours, or sodium salicylate in the same dose, and keep the patient in bed. If orchitis develops the pain in the testicles may be relieved by hot poultices; the patient in bed, and the parts well supported. If any enlarged glands develop shave the skin and apply twenty-five per cent. ichthyol collodion. In chronic prostatitis, massage the prostate through the rectum, give phenyl or sodium salicylate, or oil of turpentine, in full doses, and persevere until the expressed secretion contains no gonococci. In chronic posterior urethritis locate the diseased membrane with the urethroscope, and paint the surface with silver nitrate, two grains to the ounce, followed immediately with a normal salt solution. Afterward irrigate twice daily with a solution of one of the organic silver compounds.

Some patients who are in a poor condition physically continue to have the morning drop and a little mucous discharge; these signs clear up on full doses of syrup of hypophosphites, with full nourishing diet.

A patient is never dismissed from observation until the urine is free from threads and repeated examination of the morning urine with the centrifuge and the microscope fail to reveal any gonococci.

We find that patients will come when required and follow direction to the end if they are made to pay a liberal fee in advance. This is always required before any treatment is undertaken.

Dr. M. Casper, of Louisville, Kentucky, observes:

Call it gonorrhœa only after you are microscopically sure of it, for moral as well as possible legal reasons, that is, specific urethritis, due to the gonococcus of Neisser. In acute cases order patients to bed, which advice although sound is seldom, for obvious reasons, heeded. Direct him to drink large quantities of water to promote free urination, thus keeping the urethra flushed out as well as diluting and eliminating toxines that sooner or later enter the blood. Put the patient on simple diet forbidding alcohol in all forms, pepper, sauces, or highly seasoned food. Tobacco may be injurious, but often melancholy is averted by its use which I allow in moderation. Instruct the patient to avoid the opposite sex, good and bad, for even an innocent, virtuous sweetheart may stir up the sexual desire in a highly inflamed organ which is injurious. Even thoughts of women increase priapism. Instruct the patient of the nature of his disease, as many have been misled as to its serious-

ness, infectiousness, complications, etc. Be sure to emphasize the importance of sticking to the treatment until discharged and that cessation of visible discharge from urethra is not a sign of cure.

Internal remedies are of value only in a general way, in beginning, calomel and salines are beneficial as in any infection. Keep up the best physical tone as we must aid Nature in overcoming this disease. Urinary antiseptics may do some good, but drugs that irritate the kidneys should be avoided, as those organs already have increased labor of eliminating toxines, etc. The hexamethylenamine group of drugs are the most valuable as urinary antiseptics. Methylene blue is useful for mental effect only.

Local treatment: After all, rely on local medication chiefly for cure. Do not treat patient half way by giving him a syringe and bottle of local medicament, for although he may get well under such treatment, the large majority do not. If the patient is seen early, first or second day of discharge, the disease may be aborted by frequent use of injections of freshly prepared solutions of one of the organic silver compounds or potassium permanganate, from 1 in 10,000 to 1 in 4,000 (all solutions to be warm). Any of these are curative if properly used carefully and cautiously by the physician himself. After using first one remedy then another, I have always returned to potassium permanganate, which I use at the present time; it is surely curative, easy to control its strength, which never varies, and is not irritating in such strength, and also much cheaper, allowing use of much larger quantities. It should be freshly prepared each time. The mode of use is all important. If the disease is confined to the penile portion, and it usually is for the first twenty-four or forty-eight hours, then after patient urinates place a soft rubber constrictor carefully around root of penis, or have the patient constrict it with thumb and forefinger, and thus irrigate only penile portion of urethra with the solution. When thoroughly cleansed out, inject a little stronger solution to be retained a few minutes. Repeat this as often as the case demands or circumstances permit. Two or three times daily especially in the first part of treatment and in early cases. Avoid using solutions too strong thus irritating, for nothing is gained by strong solutions, and they add greatly to patients' discomfort.

After the penile portion is well cleansed, remove constriction and give posterior irrigation if disease has extended to posterior region, and it always is in cases of more than three days' standing. In very severe cases with great amount of swelling and violent inflammation, cease irrigations altogether or use only warm, normal salt solutions. Irrigations do harm in these cases. Better try to keep the patient in bed with absolute rest and have him frequently suspend penis in a glass or can of hot water kept constantly as hot as can be comfortably borne. Do this frequently and for from twenty to thirty minutes each time. After the violent inflammation has subsided, proceed with posterior irrigations once or twice daily; however, flush out anterior urethra first each time.

Chronic cases: These are always stubborn. Use irrigation of potassium permanganate or silver nitrate (in from 1 in 10,000 to 1 in 2,000 solutions), by deep injection with Guyon syringe or catheter and ordinary syringe. Gonococcic vaccine is of material aid in chronic cases as well as most complications and sequelæ, especially gonorrhœal rheumatism which is promptly relieved by the vaccine treatment.

Complications should be sought for and anticipated so that they can be promptly dealt with and not get too severe. In epidydimitis, cease irrigations and put patient at rest. This with local applications of heat and liquid guaiacol, one part to four of sweet oil, painted on the scrotum, every three or four hours, promptly relieves the pain. Suspensory bandage is useful as a prophylactic as well as aid in cure of epidydimitis, and should be worn for a long time after subsidence of active inflammation. Strictures are treated by gradual dilatation following each with irrigation of potassium permanganate solution if the gonococcus is present in secretions.

Always thoroughly examine the prostate gland and its secretion for the gonococcus (severe secretion by massaging gland through rectum with forefinger). The disease usually lurks here in most subacute and chronic cases and routine daily massage with finger or special rectal vibrator followed by irrigations or deep injections materially hastens cure. Nocturnal painful erections are best treated with cold applications, the only drug being effective is an opiate, though bromides are useful adjuvants.

Cystitis is treated with irrigations of silver nitrate solution.

The patient is considered well only after all gonococci have disappeared from the secretions. The patient is usually well in acute cases when the first urine is as clear as the second on three successive days, but it is well to have the patient report for examination in a week afterward, especially if he has been "out with the boys" and partaken of alcoholic drinks. In chronic cases the first urine always contains some shreds, and is thus always distinguishable from the second urine, even in cases that are well. Astringents are contraindicated in all stages except they may be useful in the catarrhal stage that sometimes persists after the disappearance of gonococcus and due to irritation.

Gonorrhœal ophthalmia is a rare complication in adults under modern care and prophylaxis. It is best treated by frequent and abundant irrigations of the affected eye with warm normal salt or a weak potassium permanganate solution or a solution of one of the organic silver compounds, every fifteen or twenty minutes in the beginning. It is important to keep the patient quiet in bed in a dark room. Also protect the good eye with watch crystal and adhesive strips. Irrigation intervals may be lengthened only after improvement occurs. Astringents are useful only in late stages to combat any resultant after inflammation. Ointment of boric acid may be useful and soothing, applied twice daily. Cold applications are also soothing, and pledgets of gauze cooled by placing on a cake of ice may be applied during intervals of rest. Heat has a similar effect, and in the light of modern hyperæmic therapy is preferable to the cold applications. As in any form of gonorrhœal infection an early start in treatment means much and delay may cost the sight of the affected eye.

Dr. Paul F. Ela, of East Douglas, Mass., writes:

In treating gonorrhœa a physician undertakes a responsibility which is peculiar to this one among many "infectious diseases dangerous to the public health."

Under the laws of Massachusetts in case of measles, chickenpox, or whooping cough we physicians must subject to the inconveniences of quarantine and disinfection whole families who are innocent of any transgression, while we must studiously respect the privacy of adults who have violated the law of the land. This leaves the entire responsibility for the control of a dangerous contagion divided between two individuals, one of whom may understand pretty well the danger, but has no power to avert it except by effecting as promptly as possible a cure of the other, who is ignorant, and probably selfish, self indulgent, and controls absolutely the possible spread of infection from himself. The physician must instruct this individual as to the danger to himself and others and his personal responsibility. This is comparatively easy in the days when the exuberant nastiness of the discharge keeps alive the patient's shame and anxiety, and he is almost ready to vow chastity for the rest of his life. But it is difficult to retain control of the patient when the discharge under efficient treatment has diminished to the almost imperceptible stickiness so familiar in the later stages.

The only motive powerful enough to control him at this time is the determination to get what he has paid for. Therefore the physician is only doing his duty to the general public when he insists upon an advance payment large enough to arouse that determination and keep it alive until the last vestige of contagion is swept away or the hopelessness of further treatment is established. I begin treatment by showing to the patient the gonococcus in his own discharge as a part of his instruction in personal hygiene. I tell him that I expect to treat him for at least six weeks. During treatment I demonstrate the presence of shreds in the urine and do not permit him to imagine himself cured so long as these can be shown using the "two glass test." I have had no opportunity to try Dr. Huber's test by retaining the urine for twelve hours as detailed recently in this *Journal*.

In all cases I practise irrigation from the beginning if I can get the patients to attend for treatment. I try to have them come twice a day. They seldom can. When I cannot have them come to me for treatment, I depend upon hexamethylenamine from fifteen to twenty grains each day in divided doses. This has given better results than anything else I have tried for internal use, though the old Lafayette mixture sometimes gives excellent results.

It is notable that those who have reported successes in aborting acute gonorrhœa all speak of the great increase of discharge following the injection of strong solutions of the various silver preparations which are used in this form of treatment. I think the successes reported are due to an increased flow of mucus excited in the uninfected portion of the canal by these strong injections. I believe this mucus acts both as a protection to the surfaces it coats, and as a sort of irrigation sweeping away infectious material and to some extent disinfecting it. I have never "aborted" a case.

Theoretically an irrigation fluid would be too mild in antiseptic value to destroy gonococci even on the surface of the urethra, and would probably cause infection of the deeper portions of the canal by washing the cocci into that portion, where some of them would probably lodge, and the same objection would hold against the use of a "retrojection" catheter pushed beyond the infected area. But in view of the fact that the infection seems to spread of itself in neglected cases the objection may be disregarded. I do not use a catheter.

At the same time the physician should seek to avoid the danger by following a rational technique. The patient should be made to wash thoroughly with soap and warm water the entire genitalia, paying especial attention to the glans and the preputial pocket around it. The physician should then direct the stream from the irrigator over the glans and preputial folds, cleansing them again. Then he should compress the urethra an inch or so back of the meatus and wash out the anterior portion of the urethra first, preventing the fluid from getting back deeper in the urethra by his compressing fingers. A pint or more should be used in this preliminary work. Then the entire anterior urethra should be repeatedly flushed out with a strong stream, alternately dilating and collapsing the tube. I forgot to mention that I have the patient urinate first of all if possible. The bladder may be filled and emptied several times if the cutoff muscle permits. The irrigator should be from six to ten feet above the floor. I believe the effect is better from the greater hydraulic pressure. The alternating pressure and relaxation have a massaging effect which I believe to be beneficial.

Permanganate solutions from 1 in 10,000 to 1 in 2,000, according to the tolerance established, are my usual irrigations, but as I believe that any tolerable fluid is too weak to affect the cocci except by mechanically removing them I change to other fluids at times. I have used weak silver nitrate and organic silver compound solutions, and found them all good. If you examine the discharge for cocci frequently in the patient's presence and then use a manifestly different solution from the one last employed, it has a good mental effect. You are studying his case.

As to complications, balanoposthitis, yields at once to the cleansing force of irrigation supplemented by soap and water. Chordee is rarely severe enough to be troublesome, and yields to bromides. Ardor urinæ is inseparable from the nature of the disease, but the first irrigation usually mitigates it, and the internal administration of alkalies reduces it to a minimum. Periurethral abscess, orchitis, bubo, demand ordinary surgical treatment. A gonorrhœal septichæmia would need the same treatment as any other, rest and supporting treatment with such measures as local manifestations demand, and at least a trial of vaccine therapy.

The treatment of chronic gonorrhœa and its usual complications may lead to the practice of almost any measure found in the treatises on genitourinary surgery.

The general treatment of the disease should be

varied according to the state of the patient. Whatever condition a man may present at the outset, there is very likely to be more or less anæmia before he is freed from his trouble and a need of tonic and supportive treatment. The diet should be more liberal at this time. But all through treatment aerated drinks of all sorts should be suppressed, and alcoholics taken only when prescribed medicinally.

To protect the clothing from the discharge I cut a hole in the centre of a small square of gauze bandage, through which hole the glans is thrust until the postcoronal fold is encircled. The prepuce is then drawn forward over the gauze whose corners protruding absorb the discharge. I instruct the patient to change this as often as it becomes wet, and to burn it after removing it. I also warn him of the danger in infected fingers so that he may not fail to wash them after handling infected material.

The number of methods of treatment for acute gonorrhœa which produce good results in the hands of the inventors, together with the fact that "cure" seldom results in my own experience under five or six weeks, makes me think that the most I can expect to accomplish is to alleviate symptoms, and render complications unlikely. I believe I have accomplished this because no one whom I have treated for acute gonorrhœa until I was satisfied has so far as I know become chronic, while several who stopped treatment before I was willing have returned with unmistakable symptoms.

The ingenuity of some treatments in theory is very great. I remember reading of one genius who proposed scrubbing the infected portion of the urethra with a bristle brush made like a pipe cleaner, and said he had had very good results. As I never found but one reference to this method, I doubt if it attained any wide vogue, and I have had no experience with it.

Dr. W. H. Whitehead, of Atlanta, Ga., published in September, 1903, an article discussing the pathology of the disease and gave the formula of a preparation containing pepsin, yellow mercury oxide, and silver oxide in an oleaginous cream. The idea is that the pepsin and euroid would digest out the necrotic plugs which protect gonococci in the urethral follicles, and enable the metallic oxides to destroy the cocci. No irrigation was to be used. I tried the method during two years in every case, employing irrigation, however, because I could see no harm in that. The results were no worse and no better than when I used irrigation alone. The ointment was applied through a metal applicator with a screw piston such as is used in pile pipes. There were no complications in these cases and no chronic results. Others have probably tried the method, as the formula is quoted without credit in Albright's *General Practitioner as a Specialist*. I gave it up because the medicament is expensive, and the results are no better than I got with simpler means. But the idea of obtaining prolonged contact of antiseptic substances seems rational and the method employed is as good as that using soluble bougies, which have also failed to "make good" in my experience. My patients endured the passage of the metal applicator without special complaint even when I did not use cocaine.

(To be continued.)

Correspondence.

LETTER FROM LONDON.

The Law Concerning Coroners and Death Certificates.—A Death from X Ray Dermatitis.—Reciprocity with Italy.—An Accident to Dr. Dawson Williams.

LONDON, *July 13, 1910.*

A bill has just been introduced into Parliament to amend the law relating to coroners and the certification and registration of deaths and burial. The bill is intended to remove certain anomalies in the law relating to coroners and inquests. In 1893 a select committee was appointed to "inquire into the sufficiency of the existing law as to the disposal of the dead, for securing an accurate record of the causes of death in all cases, and especially for detecting them where death may have been due to poison, violence, or criminal neglect." The report of that committee indicates the urgent necessity for reform.

In December, 1908, a departmental committee of the Home Office was appointed to inquire into the law relating to coroners and coroners' inquests. The provisions of the bill just introduced are intended to give effect to many of the recommendations of the departmental committee of 1908 and of the death certification committee of 1893. The committee drew attention to the fact that the law as it stands at present does not require a certificate of death to certify as to the fact of death or the identity of the deceased, but merely as to the cause of death. They further state that it is no fault of the law if premature burials do not take place. The present law of death certification offers every opportunity for premature burial and every facility for concealment of crime. The principal provisions are the following: "No person shall be appointed a coroner unless he be a practising barrister of not less than five years' standing or a solicitor of not less than five years' standing, or a registered medical practitioner who is also a barrister or a graduate in law of a university in the United Kingdom."

A coroner after due inquiry into any case referred to him may decide not to hold an inquest if he is satisfied that the deceased died a natural death, and for the purposes of such inquiry he may order a post mortem examination to be made. Any county or borough council may appoint one or more medical investigators or pathologists in each coroner's district to assist the coroner in his inquiries and inquests and to make post mortem examinations.

It shall not be necessary for the jury at any inquest to view the body unless the coroner, or at any time during the first sitting of the inquest a majority of the jury, shall deem a view necessary. Before giving a certificate of death a registered medical practitioner shall personally inspect the body and identify it as the body of the person named in the certificate whom he has attended during his last illness and shall certify to the fact of death as well as to its cause.

There are several points in the bill which medical practitioners would like to see altered before it

becomes law. Thus, it is provided that every coroner shall cease to hold office on attaining the age of sixty-five and the granting of a pension is left to the local authority which appointed him. This means that in many cases he would get no pension at all. Another serious defect in the bill is the clause which provides that a medical practitioner shall not be eligible for the office of coroner unless he is also a barrister or a graduate in law of a university. It is well for a coroner to have some knowledge of law, but it is still more important that he should have a knowledge of medicine. Another serious objection from the medical point of view is that, while the bill adds to the burden already placed on the medical practitioner in respect to certificates of death, it makes no provision for remuneration. The form of certificate proposed is a somewhat elaborate document which the doctor has to fill up under penalty of a fine, a duty which he is compelled to discharge without fee or reward. The proposed bill is a step in the right direction, but in many respects it falls short of the requirements of medical men.

The death has occurred, at the age of forty-six, of Mr. Harry Cox from the results of x ray dermatitis. He was an extremely clever electrical mechanician and made many valuable additions to the necessary apparatus. It is only fourteen years since Röntgen's discovery was announced to the world and in England alone at least half a dozen early workers have succumbed to the rays. With our present methods of protection workers should now be safe from x ray dermatitis. Not long ago a sum of £2,700 was collected for the benefit of Mr. Cox.

The General Medical Council has published an account of an agreement which has been entered into with the Italian government for the establishment of medical reciprocity between the two countries. Under the new law foreign practitioners whose countries grant reciprocity of medical practice to Italy are favorably affected, since, instead of the limited right they now exercise of practising only among foreigners, they will henceforth enjoy unrestricted freedom. As matters now stand this concession benefits only British medical men, Great Britain being the only country that grants reciprocity to Italy.

This reciprocity was accorded in 1901. An Italian medical register will be created in each province, and registration will be compulsory. Applicants must be in the enjoyment of civil and political rights and must, of course, possess a recognized diploma of a foreign state which has accorded reciprocity for the exercise of their profession to Italian subjects holding Italian diplomas. The existence of previous restrictions has formed a source of discomfort and hardship to British practitioners in Italy, and the freedom now conferred will be welcomed.

I regret to announce that Dr. Dawson Williams, the editor of the *British Medical Journal*, has met with a serious motor car accident from the result of which he is now lying in a country inn in Sussex.

LETTER FROM EDINBURGH.

A New Nursing Home for Edinburgh.—The Harveian Festival.—The Cullen Victoria Jubilee Prize.—Annual Meeting of the Medicopsychological Association.—Edinburgh University Graduation Ceremony.—Retirement of Dr. John Fraser.—American Surgeons in Edinburgh.

Edinburgh, *July 18, 1910.*

The scheme for a nursing home in Edinburgh, to be operated at moderate prices for the benefit of those unable to afford the more expensive homes, is again being discussed. The proposal, which was briefly referred to in a former letter (February 21st), is to provide a nursing home of fifty beds, of which eighteen would be at the rate of 21s., eighteen at two guineas, and the remainder at three guineas weekly. Those paying the highest rate would have a single room. It is intended that the home be managed by representatives appointed equally by the Edinburgh Medical Practitioners' Association, the Edinburgh branch of the British Medical Association, and the Charity Organization Society, and it is proposed to ask assistance from the public toward defraying the initial cost. The home would be open to all registered medical practitioners, and it would be conducted on self supporting lines. As 21s. weekly is the maximum that many patients could be asked to pay, and as this is below the minimum cost, some system of regulation of admission at the lowest rate will be necessary in order that the privileges of the home be not abused. The matter has been discussed and well supported by the medical profession. A conference has recently been held between the Edinburgh Medical Practitioners' Association and the Charity Organization Society, when Dr. Chalmers Watson laid the medical proposals before the society and asked for their co-operation, which was promised.

The 128th Harveian Festival, postponed on account of the death of King Edward, was held in the Royal College of Physicians on July 1st. The president, Dr. Strachan, of Dollar, delivered the Harveian Oration, choosing for his subject Cell Life and the Life Cell in Animal Physiology. He described the animal body as a commonwealth of cells grouped and organized. The essentials of life, he said, must be in each cell. He discussed the vital principle, the modes of nutrition, and the differential treatment accorded to the fat in the digestive and assimilative process of food transformation. In the evening the annual dinner was held, to which forty Harveians sat down. The toast of "The Immortal Memory" was given by the chair, and a pleasant evening was spent.

The Royal College of Physicians of Edinburgh has awarded the Cullen Victoria Jubilee Prize to Dr. R. W. Philip, for his work on *Tuberculosis*. The prize is awarded once in every four years for "the most important contribution to practical medicine." Dr. Philip's work in organizing and superintending the Royal Victoria Hospital for Consumption in Edinburgh is well known, and he well deserves the honor.

The Medicopsychological Association of Great Britain and Ireland is to hold its sixty-ninth annual meeting in Edinburgh this year, under the presidency of Dr. John Macpherson. The meeting will

take place at the Royal College of Physicians on July 21st and 22nd.

The Edinburgh University graduation ceremony took place in the McEwan Hall on Friday, July 1st. As already stated in these letters, the ceremony formerly took place in April, but the date has now, for various reasons, been changed to July. A special interest attaches to this year's graduation, inasmuch as the list of those to whom honorary degrees were granted includes some very distinguished names. Among those receiving the honorary degree of LL. D. are Chief Scout Lieutenant General Sir R. S. S. Baden-Powell, the hero of Mafeking; Lord Hugh Cecil, M. P., son of the late Lord Salisbury; Dr. John Chiene, lately professor of surgery in Edinburgh University, and Dr. Matthew Hay, professor of forensic medicine in Aberdeen University. Professor Baldwin Brown delivered the graduation address, in which he gave a retrospect of the old and the new in university life. A Commemoration Service was held in St. Giles's Cathedral immediately after the ceremony; and later a distinguished company assembled at a luncheon in the University Union, at which some of the honorary graduates spoke.

Dr. John Fraser, commissioner in lunacy, who has been an official of the General Board of Lunacy for thirty-three years, has just retired by reason of the age limit. Dr. Fraser was always an enthusiast in asylum administration, there being no detail of the subject on which he is not an expert, and the results of his work in this connection are apparent in the present satisfactory position of lunatic asylums in Scotland. Dr. Hamilton Clelland Marr, superintendent of the Woodilee Asylum, Glasgow, has been appointed his successor.

On Wednesday, July 6th, a party of American surgeons, numbering about thirty, visited Edinburgh. These gentlemen are on a visit to this country, and are visiting a number of the surgical schools of Great Britain. When in Edinburgh they were shown over the surgical side of the Royal Infirmary, after which they visited the Royal Hospital for Sick Children. In the evening the Royal College of Surgeons entertained them at dinner in their hall, Mr. J. M. Cotterill, the president, occupying the chair.

New Remedies.

(*Continued from page 176.*)

Iodarsyl is the name applied to a solution for intravenous injection containing sodium iodide, 0.4 gramme, and sodium paraamidophenylarsinate, 0.1 milligramme. It is put up in ampoules.

Iodcallistan is a combination of iodine and vegetable mucilage.

Iodpeptid forms a light yellow fluid with a green fluorescence, which is obtained by peptonizing albumin, dissolving the product in water, and exposing it to the action of iodine in *statu nascendi*. It is put up in ampoules containing 5 c.c. Administered hypodermically in syphilis, tuberculosis, and struma.

Lactoform is a combination of milk and formaldehyde, the milk being evaporated in vacuo and transformed into a formaldehyde albumin emulsion. Used externally in rheumatism.

Lecipon is a water soluble preparation of lecithin in powder form, containing 10.5 per cent. of egg lecithin.

Lentocalin is the name applied to tablets containing the unchanged components of the lens of mammiferæ. Used in senile cataract.

Leucofermantin is a normal animal serum, the antiferment content of which has been so far increased as to make it correspond to that of normal human blood. This antiferment to tryptic pus or leucocytic ferment is therapeutically employed to combat inflammatory processes where a suppurative and fermentative destruction of tissue is to be avoided.

Levurine Preparations.—Levurine extractive is a concentrated form of yeast. Iodurase and bromiase are compounds of levurine with iodides and bromides, respectively. Œnase is a preparation of grape ferments prepared from the yeast of champagne wine. Cidrase is prepared similarly from the ferments of cider, and lactimase from the lactic acid ferments. All are used internally in diseases in which the respective ferments are indicated.

Lodal is prepared by the oxidation of laudanosine (an alkaloid occurring in opium) in a manner analogous to the preparation of cotarnine from narcotine. Its action resembles cotarnine, in producing tonic contraction of the uterus, but lodal exercises more effect on the heart, slowing and strengthening the beat and raising the blood pressure. It is given in "tabloids" of 1 grain in cases of uterine hæmorrhage.

Lysargin is a proprietary name for colloidal silver, used as a nonirritating antiseptic and prophylactic.

Maculanin is potassium amylate. It is a caustic like potassium hydroxide, but milder in action.

Massogran is a milk curdling compound activated with the lactic acid bacillus, an analogous compound to Massolin (which see), but marketed as a granular powder.

Massolin is a pure culture of the *Bacillus Bulgaricus* of Massol, grown on one of the following media: Calcium carbonate lactose broth, calcium carbonate dextrose broth, calcium carbonate Cohendy broth, or Cohendy broth. The preparation is of an amber color and has the odor and taste of the particular medium employed as its base. It tends to prevent the growth of putrefactive and pathogenic organisms in the human system and is used for the treatment of suppurative conditions, especially in nasal and aural affections. It is applied directly to the diseased area.

Mensan is a preparation of hazel nut which is credited with efficient styptic properties in post partum hæmorrhage, nose bleed, and other disturbances of the vascular system. It is a hydroalcoholic liquid prepared from nuts that have been previously deprived of their oil, and a dose of one tablespoonful is said to represent about four ounces of nuts.

Mercochinol is mercuric oxychinoline sulphate containing 30 per cent. of mercury. Used by inunction, internally, and hypodermically in the treatment of syphilis.

(*To be continued.*)

NEW YORK MEDICAL JOURNAL
INCORPORATING THE
Philadelphia Medical Journal
and The Medical News.
A Weekly Review of Medicine.

Edited by
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Address all business communications to
A. R. ELLIOTT PUBLISHING COMPANY,
Publishers.
66 West Broadway, New York.
Cable Address: Medjour, New York.

SUBSCRIPTION PRICE:
Under Domestic Postage Rates, $5; under Foreign Postage Rate, $7; single copies, fifteen cents.

Remittances should be made by New York Exchange or post office or express money order, payable to the A. R. Elliott Publishing Co., or by registered mail, as the publishers are not responsible for money sent by unregistered mail.
Entered at the Post Office at New York and admitted for transportation through the mail as second class matter.

NEW YORK, SATURDAY AUGUST 6, 1910.

GROSS DRUGS *VERSUS* ACTIVE PRINCIPLES.

Increasing attention is being paid by pharmacologists to the cultivation of medicinal plants, and evidences of this are to be found in current literature. Not long ago attention was called in these columns to the observations of Professor Tschirch, of Berne. In his presidential address to the British Pharmaceutical Conference Francis Ransom, F. C. S., calls attention anew to the value of the complex constituents of medicinal plants as contrasted with one or other of their active principles. Tschirch, it will be recalled, spoke of the peculiar action of the drug rhubarb as a whole. The chemical experts have tracked its therapeutic activity to its oxymethylanthroquinone constituent, the active laxative principle of a related group of drugs, including aloes, cascara sagrada, and senna, but it has been definitely determined that rhubarb is dependent for its value on more than this single constituent, the best results being often obtained by administering the whole drug. The same is true of cinchona, ipecac, and nux vomica, as is pointed out by Mr. Ransom.

The tendency to resort to the use of active principles alone ought not to be carried to excess. In nux vomica, given as a tincture or as a fluid extract, we get the combined value of brucine and strychnine, and in ipecac there are two alkaloidal constituents, one of which is an emetic and the other more of an expectorant. Emetine is the best expectorant, though it is an emetic in large doses, while cephaeline, the other active constituent of ipecac, is credited with more powerful emetic properties, and it seems that a simple extract of the drug combining these two alkaloidal constituents, and perhaps others, would be the more desirable preparation to prescribe in cases where ipecac is indicated.

In our own country Professor Kraemer, of the Philadelphia College of Pharmacy, has done good work in calling attention to the varying influences of soil, climate, and surroundings on the propagation of medicinal plants, and, as has already been remarked, more and more attention is being paid to this important subject by pharmacologists in all parts of the world. The experiments conducted in New Jersey by the pharmacologists of the firm of Johnson & Johnson, looking to the production of superior species of belladonna, are well known. Raising the plant from the seed, and comparing the alkaloidal contents of one species with another, including the Japanese variety of scopola, they have arrived at interesting results which promise to throw considerable light on our knowledge of the secretion of alkaloidal bodies in plants.

President Ransom, whose herb farms at Hitchin, near London, are deservedly famous for their crops of digitalis, henbane, and belladonna, speaks with authority on the subject of medicinal plant cultivation, and his opinion should go far to sustain the words of those other eminent pharmacologists who have insisted on the necessity of the application of scientific principles in the cultivation of medicinal herbs.

The time is yet far distant when we can depend upon active principles alone for the curative treatment of disease. The complex of constituents represented by the whole drug substance or a tincture or extract of it cannot be dispensed with, however much we may consider the valuable therapeutical effects following the administration of such chemical bodies as phenolphthalein and its congeners, oxymethylanthroquinone, etc. This latter day tendency to administer attenuated doses of the alkaloids and alkaloidal principles, glucosides, etc., is in a measure to be deplored. It is important, of course, to employ definiteness of dose with the sure knowledge of effect, but, at the risk of being classed among the empiricists, we must confess to a feeling in favor of administering the whole drug, either in the form of powder, extract, or tincture. The chemists with all their skill have never yet succeeded in isolating the true active principles of digitalis, nor have they been any more successful with ergot, and the family physician of the olden days who carried his whole ergot about with him in his medicine case

got better results as a rule than the physician of today, who perhaps employs ergotine hypodermically or uses ergot in some more concentrated form than the "tea" of the country physician.

The lesson of it all is that physicians should take up different methods, giving less attention to laboratory teaching and more to bedside instruction than they do nowadays. It is a common subject of remark that the medical student of to-day is deficient in the art of formulating a magistral prescription, and if more clinical work was insisted upon and less didactic teaching followed, better therapeutic results would be seen and more of that devotion to the patient and the work of his rehabilitation that characterized the physician of a former generation.

REPRINTS FOR COMMERCIAL HOUSES.

A discussion has lately been going on in two German therapeutical journals, the *Therapeutische Monatschefte* and *Therapie der Gegenwart*, as to the wisdom of a medical journal's furnishing reprints of its articles on the order of commercial houses. An abstract of the discussion appears in the *Journal of the American Medical Association* for July 30th. It seems that some time ago the *Therapeutische Monatshefte* declined to continue supplying manufacturing chemists with reprints, whereupon Dr. W. Heubner wrote an article commendatory of that decision. Dr. G. Klemperer, the editor of *Therapie der Gegenwart*, dissented and expressed his willingness to continue the practice objected to, saying that he saw no harm in it. Heubner rejoins that the imprint of a good journal gives to a formal reprint the moral force of the dignity of the journal and greater weight for advertising purposes than would belong to extracts made in the form of quotations by commercial houses.

In our opinion the question is a knotty one. We do not in the least question the truth or pertinence of what Dr. Heubner says, and our own practice is in conformity to that which he commends. It must be admitted, however, that a frank reprint in due and regular form might save a journal from such misinterpretation as would at times be put upon garbled extracts, textually correct but wrested from their proper context. But if our policy, which is that now followed by the *Therapeutische Monatshefte*, is to be observed by the generality of medical journals, it will be necessary for them, in order to accomplish the purpose, to decline to furnish more than a certain number of reprints to the author himself, for there are men in the profession, we regret to say—some of them "of high degree"—who would not hesitate to order for themselves reprints which they intended to turn over to a commercial house. In consequence of this consideration we have frequently declined articles accompanied by orders for inordinate numbers of reprints, even when there was no other apparent reason to doubt the authors' good faith.

There is another commercial device from which we have suffered occasionally. A man inserts in our advertising columns an optimistic, though not really objectionable, account of some pharmaceutical preparation; then he issues his "literature" containing a quotation from the advertisement, introduced by the statement "The *New York Medical Journal* says:"—thus craftily misrepresenting us. It is for the most part the small and occasional advertisers who resort to this trick; the large and experienced houses know better than to engage in such transparent disingenuousness.

THE TOXÆMIA OF PREGNANCY.

The intricate problems connected with the toxæmia of pregnancy were made the subject of a number of communications presented at a meeting of the Pathological Society of Philadelphia held several months ago and published in the June number of the society's *Proceedings*. Those who read the formal papers were Dr. James Ewing and Dr. John Edgar Welch, of New York, and Dr. Edward P. Davis and Dr. Leo Loeb, of Philadelphia. The discussion that followed the reading of these papers consisted of remarks by Dr. B. C. Hirst, Dr. Richard C. Norris, Dr. J. C. Applegate, Dr. William H. Welker, and Dr Collin Foulkrod. Every gentleman who took part in the proceedings of the evening contributed something substantial to such an exposition of the subject as has been much needed. In particular, Dr. Ewing's paper seems to us to be one of the most scholarly essays in pathology that it has ever been our privilege to read. One of the speakers commended it as "a critical résumé," but it was more than that, for the author's own investigations figured essentially in it.

It is common to speak of pregnancy and parturition as physiological processes, and such of course they are; but Dr. Ewing says: "It is a curious maladjustment of Nature that places pregnancy among conditions difficult to separate from the pathological." "We are accustomed," he continues, "to refer the high morbidity of gestation to the unhygienic influences of modern life, and love to refer to the Indian women who overtook the moving caravans of their tribes after a brief delay for parturition, but history says little about the women who never caught up with the caravan. To-day obstet-

ries in India, China, and Africa deals with the same ponderous process and meets the same formidable hazards as in Europe and America." It may be found, we suggest, that whatever advantage the parturient savage woman may have over her civilized sister is largely dependent on the comparatively small size of the fœtal head among savages.

Dr. Ewing thinks it probable that mild degrees of toxæmia exist in the majority of pregnant women, and he makes the very practical point that hyperemesis gravidarum, even when it subsides, should put us on our guard against the subsequent occurrence of eclampsia; for the one condition, proceeding from a toxæmic hepatic insufficiency, easily leads to late renal changes. He recognizes that obscurities still exist in the pathology of the toxæmia of pregnancy, but he thinks it must be admitted that the last decade has witnessed important progress in our knowledge of the disease. He concludes with the following hopeful words:—

In systematic urinary analyses we have a means of recognizing the character and gravity of the metabolic disorder, as well as a basis for instituting hygienic and dietetic measures with a view of forestalling and preventing the dangerous stages of the disease. Urinary analyses may not tell when to empty the uterus, but they may suggest treatment that will make it unnecessary to empty it at all. Finally, the indications for treatment have been more clearly defined. Doubtless there are necessarily fatal forms and stages of all types of toxæmia, but with the great majority of patients the relief of acidosis, the hygiene of the intestine and correction of indicanuria, the careful control of the diet with reduction or exclusion of proteins, and the intelligent use of thyreoid extract, should control the milder cases and greatly reduce the mortality in the severe forms of the disease.

THE VIRCHOW MEMORIAL.

It is astonishing that it took nearly eight years to unveil a monument to Rudolf Virchow. Modern Germany, especially its capital, likes to embellish itself with monuments. The last forty years have been peaceful for the "Vaterland," and there have not been many conquerors and statesmen and princes to immortalize; so it has come to pass that science has been represented by its coryphæi. But these monuments are more memorials than statues. We have thus a Kussmaul memorial in Heidelberg and a Mikulicz memorial in Breslau, to mention only a few.

Why, pray, memorials and not monuments? The princes, even if they are of only very local celebrity, receive a monument representing the full figure in all the regalia. Poets are sometimes permitted to be represented by statues, as in the cases of Goethe and Schiller; but Virchow, who certainly added to Germany's fame as much as Prince Johann Cicero of Brandenburg or the poet Schiller, has been granted only a memorial. But if the Germans are satisfied, we should not object.

This Virchow memorial was unveiled in Berlin on May 29th. It represents a man who is overcoming a fabulous beast. On the front of the pedestal is a relief of Virchow, while the opposite side shows Virchow surrounded by his pupils. It is the work of the sculptor Fritz Klimbsch, and may be very artistic, but it does not represent Virchow. It may give credit to the artist, but not to the great pathologist.

CAMPAIGN MEDICAL SERVICE.

Under the direction of the surgeon general of the army, Major Paul Frederick Straub, of the Medical Corps (General Staff), has prepared a dainty little volume entitled *Medical Service in Campaign,* designed as a handbook for medical officers in the field. It includes the substance of a series of lectures delivered at the Camp of Instruction in Antietam last year. It will doubtless prove very useful to medical officers of the land forces.

FLANNELETTE.

It is important, we think, that physicians should continue to call the attention of mothers to the dangers connected with the use of such fabrics as flannelette, an artificial flannel that is much used in the making of children's night dresses. No more inflammable material is used perhaps in the fabrication of sleeping garments and coverings than this flannelette, and some of the awful fires ending in the destruction of child life can be attributed to the wearing of this fabric. From a recent report of the British Fire Prevention Committee we learn that steps have been taken to warn parents of the dangers connected with this material. It is recommended in this report that signs shall be worked in the selvedge of the material bearing the words "Burns rapidly."

While our local Bureau of Combustibles has taken appropriate action to prevent by well regulated devices the indiscriminate use of petroleum products, and a number of uninflammable cleansing products are now marketed, no action has been taken looking to the prevention of the enormous sacrifice of child life that is due to the wearing of night garments of the highly inflammable flannelette. A garment of any fabric that, once catching fire, may be entirely consumed within a few moments is not fit for a child to wear. The subject is one of more than local interest and should be studied by the municipal authorities throughout the nation.

News Items.

New Doctors in Maryland.—At a meeting of the Board of Medical Examiners of Maryland, held Thursday, July 28th, ninety-three candidates received licenses to practise medicine in the State of Maryland.

A Tuberculosis Exhibit at Newport.—A tuberculosis exhibit was held in Newport, R. I., last week under the auspices of the Newport Association for the Relief and Prevention of Tuberculosis. On the opening night Dr. Henry L. Barnes, superintendent of the State Tuberculosis Sanatorium, made the principal address.

A New Hospital in Lansing, Mich.—Plans have been filed for the new Sparrow Hospital in Lansing, Mich., which is the gift of Mr. Edward W. Sparrow, of New York. The cost of the hospital, including the site, is $100,000. The building will be of pressed brick, with Amherst sandstone trimmings, and in construction and equipment will be of the latest design in every respect.

The Western Pennsylvania Public Health Conference will be held in Pittsburgh, Pa., some time this fall, and the work of preparing the programme for the three days' session has already been started. Dr. W. H. Mercur has been elected chairman of the general committee and Mr. Charles F. Weller, secretary. Ten sub-committees have been appointed to assist in the work of organization.

No Public Drinking Cups in Massachusetts after October 1st.—The common drinking cup will be barred in Massachusetts after October 1st, in accordance with an act passed by the last legislature. The State board of health has authorized this action, in an effort to prevent the spread of communicable diseases. No drinking cups will be allowed in public parks, streets, public buildings, institutions, hotels, theatres, railway trains, stations, or boats.

Texas to Fight Hookworm Disease.—It is reported that the State Board of Health of Texas has decided to accept a share of the Rockefeller fund to eradicate hookworm disease, and the State will also provide an additional fund of $50,000 to carry on an active campaign against the disease in Texas. This action on the part of the board of health was due to the official report that victims of hookworm disease were found in nearly one hundred counties in the State.

A Psychological Clinic at Teachers' College.—A clinic for the examination of unusual children has been established at Teachers' College, New York, as a part of the summer work of Columbia University. Dr. Stevenson Smith gives demonstrations of the psychology of childhood, and examines children at the Vanderbilt Clinic every afternoon, but Saturday, at two o'clock. This clinic is only temporary but the college authorities hope to determine by experiment whether or not a permanent psychological clinic would be of value.

Cholera in Russia.—The general organization of mine owners in South Russia has appealed to the Government to adopt special measures to combat the epidemic of cholera which is raging with especial virulence in the great coal mining district in south Russia. Approximately two thousand cases with a mortality of fifty per cent. are registered in the Bakhmut and Slavyanosbsk districts of this region, and the scourge has caused a panic among the miners and a wholesale exodus from the mines.

Vanderbilt Clinic to be Enlarged.—Plans have been filed for enlarging the tuberculosis clinic on the roof of the Vanderbilt Clinic, Amsterdam Avenue and Sixtieth Street, New York. The addition, a one story structure, will provide two compartments for males and females, and will cost $800. An extension of the laboratory of the clinic will also be made to cover the entire length of the building over the corridor just back of the Sloane Maternity Hospital. This improvement will cost $6,000.

Personal—Dr. Robert E. Doran, first assistant superintendent at the Willard State Hospital for the Insane, has been appointed by the State Commission in Lunacy a State medical inspector for the commission.

The Astley Cooper Prize for 1910 has been awarded to Dr. E. H. Starling, professor of physiology in the University of London, for an essay on the physiology of digestion.

Dr. Michael J. Thornton has been appointed assistant to Dr. M. S. Gregory in the psychopathic ward of Bellevue Hospital, to succeed Dr. Mark L. Fleming.

Alterations in the New York Homœopathic Medical College.—Plans have been filed for making alterations in the west wing of the building of the New York Homœopathic Medical College. The plans provide for closing up several windows, changing dormer windows into square ones with metal frames, building a new floor above the finished library floor, and a new floor on the third floor. The estimated cost of these improvements is $40,000.

The Röntgen Ray Laboratory of the Philadelphia General Hospital.—Dr. William F. Manges has been appointed chief of this laboratory, to succeed Dr. Mihran K. Kassabian, who died recently from the effects of repeated burns from the Röntgen rays. Dr. Manges has had charge of the x ray laboratory of Jefferson Medical College for some time, and will continue in charge of it. He has been doing the work at the Philadelphia General Hospital since Dr. Kassabian's death.

Prize Awarded for Essay on Glaucoma.—The gold medal offered for competition in connection with the International Congress on Ophthalmology at Naples last year has been carried off by an English competitor, Dr. Thomson Henderson, of Nottingham, according to the *British Medical Journal*. The prize was for the best essay on the subject of glaucoma. Dr. Henderson's paper was entitled, The Rationale of Iridectomy in the Treatment of Glaucoma: an Anatomical, Physiological, and Pathological Research.

The Lake Keuka Medical and Surgical Association held its eleventh annual meeting at Grove Springs, N. Y., on July 23d and 24th, under the presidency of Dr. Robert M. Elliott, superintendent of the Willard State Hospital. Nearly one hundred members were present and the meeting was in every way one of the most successful ever held by the association. The following officers were elected to serve for the ensuing year: President, Dr. R. R. Fitch, of Rochester; vice-president, Dr. C. L. Stiles, of Owego; secretary and treasurer, Dr. H. B. Nichols, of Syracuse. The next meeting of the association will also be held at Grove Springs.

The Lehigh Valley Medical Association.—The semi-annual meeting of this organization was held at Delaware Water Gap on Thursday, July 21st, under the presidency of Dr. O. H. Sproul, of Flemington, N. J. The subject of infantile paralysis was discussed, and a committee appointed to cooperate with the Rockefeller Institute in the work of determining the cause of the disease. This committee consists of Dr. W. L. Estes, of South Bethlehem, Dr. Edgar M. Green, of Easton, Dr. H. T. Edwards, of Bethlehem, Dr. H. H. Herbst, of Allentown, and Dr. Luther. Among those who contributed to the programme were Dr. Charles K. Mills, Dr. J. H. Musser, and Dr. G. A. Piersol, of Philadelphia.

The Campaign Against Infant Mortality in Philadelphia.—The campaign for the reduction of infant mortality in Philadelphia, which was begun early in the summer, has become well systematized, and a statement has been issued by the Department of Health and Charities concerning the work which has been done. Three new milk stations were opened recently, one of them being at Mount Sinai Hospital, with nurses and doctors in attendance, and Dr. Neff urges that all milk stations be kept open on Sunday. In spite of all that is being done, however, to decrease the mortality of infants under two years of age, it has been forty per cent. higher this summer than it was in 1909, and twenty-nine per cent. higher than the average for the past five years.

Statistician and Editor for the New York State Commission in Lunacy.—Early in September there will be held an examination under the Civil Service Commission of a competitive nature, for the position of statistician and editor to the State Commission in Lunacy, Albany, N. Y. This will be open to New York State male residents only. Salary, $2,000. The duties of the position include those of medical and economic statistician and assistance in editing the publications of the department. Candidates must have a college training in liberal arts, and also have completed a course, or courses, in statistics, and also must have had practical experience in statistical work. Some knowledge of medicine or biological science (obtained from actual methodical study), and also some experience in editing, are desirable, and will be considered in the rating for experience and education. Blanks and information regarding the scope of the examination may be obtained only from the Civil Service Commission, Albany.

An Extension to be Built to the Boston City Hospital.—The board of trustees of the Boston City Hospital has purchased the land and buildings at Massachusetts and Harrison Avenues, Boston, at a cost of $67,000, and on this land will be erected an extension to the south department of the hospital, which is the contagious ward. This ward has been very much overcrowded for some time, and the new building is much needed. The estimated cost of the new building is $165,000.

Field Service Training for Medical Officers in the Army.—The War Department has issued an order establishing a Field Service School at Fort Leavenworth, Kan., in connection with the Army Service School already there. The senior officers of the new school will be the commandant and secretary of the Army Service School, and the assistant commandant will be an officer of the Medical Corps, with grade not lower than major. The object of the new school will be to prepare officers of the Medical Corps and medical officers of the organized militia for the better performance of their duties as administrative and staff officers on field service, and to make research into such objects as may concern medical officers under field conditions. The course of instruction will cover a period of not less than six weeks, beginning about April 1 of each year.

The Mississippi Valley Medical Association.—The thirty-sixth annual meeting of this association will be held in Detroit, Mich., on Tuesday, Wednesday, and Thursday, September 13th, 14th, and 15th, with headquarters at the Hotel Ponchartrain. A preliminary programme has been issued, which contains a list of the papers which have been promised for this meeting, and judging from the names of the authors and the subjects of the papers, the meeting promises to be of very great interest. A splendid programme of entertainments has also been arranged for the visiting members and their friends, and a good time is expected. The present officers of the society are: President, Dr. Frank P. Norbury, of Kankakee, Ill.; vice-presidents, Dr. George W. Cale, of St. Louis, and Dr. William B. Laws, of Hot Springs, Ark.; secretary, Dr. Henry E. Tuley, of Louisville; treasurer, Dr. Samuel C. Stanton, of Chicago.

A New Building for the Jefferson Medical College.—Announcement has been made by the board of trustees of the Jefferson Medical College, Philadelphia, that Mr. Daniel Baugh, a member of the board, has purchased and presented to the institution the building at the northeast corner of Eleventh and Clinton streets, for many years occupied by the Pennsylvania Dental School. The building is three stories high, faces on Eleventh Street and Clinton Street, with an extension north on Cypress Street, and by its exposure is remarkably well lighted. There are two lecture rooms and three floors, each forty-five by one hundred and twenty-five feet, which are especially adapted to use as laboratories. The building adjoining the new Jefferson Hospital, that has been used for teaching underclasses, can now be used for clinical laboratories and will be devoted to the instruction of advanced students in the junior and senior years. The present plan of laboratory rearrangement provides for shifting some of the laboratories not used in clinical teaching to the new building, transferring others to the space vacated, and rendering available facilities for the best clinical laboratory work.

The American Electrotherapeutic Association will hold its twentieth annual meeting at Saratoga Springs, September 13th, 14th, and 15th. The headquarters of the association will be at the United States Hotel, where arrangements have been made for reduced rates for members and their friends. A splendid programme of papers has been arranged on subjects relating to the therapeutic uses of electricity and the general application of physical measures in the treatment of disease, and the meeting promises to be of very great interest. An interesting feature of the programme will be an exhibition of new apparatus and mechanical contrivances used in the practical application of electricity in the treatment of disease. A cordial invitation is extended to the medical profession to attend the meeting and take part in the discussions. The officers of the society are: President, Dr. T. D. Crothers, of Hartford, Conn.; vice-presidents, Dr. Thomas H. Cannon, of Baltimore, and Dr. Frank E. Peckham, of Providence; secretary, Dr. J. Willard Travell, 27 East Eleventh Street, New York. The late Dr. Richard Joseph Nunn, of Savannah, was treasurer. Programmes will be furnished by the secretary upon application.

Mortality Statistics of Connecticut.—During the month of June, 1910, the deaths from all causes reported from 163 towns numbered 1,252, which was 166 less than for the preceding month, and 36 more than for the month of June last year. The annual death rate in a thousand of population for the month was 14.6 for the larger towns, 13.2 for the smaller towns, and 14.3 for the whole State. The deaths reported from infectious diseases were 166, being 13.2 per cent. of the total mortality. There were 355 deaths of children under five years of age, of whom 262 were under one year of age. Twenty-eight towns were reported as having no deaths during the month of June, and from five towns no reports were received.

The Vermont School for Health Officers held its twelfth annual session in Montpelier during the past week. This school, which is held for the purpose of giving instruction to health officers in matters relating to public health, was established by law in 1900, and all health officers of the State are required to attend. The course opened on Monday evening, August 1st, and continued through Tuesday, Wednesday, and Thursday, with three sessions each day. Among the subjects discussed were the following: Sanitary science, diseases which menace public health and morals, tuberculosis in relation to the public health officers, medical inspection of schools, meat inspection, communicable diseases, artificial and substitute food products, the causes of disease, and legal points in health work.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Department of Health for the following statement of new cases and deaths reported for the two weeks ending July 30, 1910:

	July 23d		July 30th	
	Cases.	Deaths.	Cases.	Deaths.
Tuberculosis pulmonalis	614	154	523	167
Diphtheria and croup	277	25	227	21
Measles	275	11	206	8
Scarlet fever	133	9	83	3
Smallpox	..	..	1	..
Varicella	17	..	9	..
Typhoid fever	59	6	91	17
Whooping cough	34	6	42	14
Cerebrospinal meningitis	3	4	2	5
Total	1,412	215	1,184	245

Vital Statistics of New York.—During the week ending July 23, 1910, the deaths from all causes reported to the Department of Health of the City of New York numbered 1,552, corresponding to annual death rate of 17.18 in a thousand of population, as compared with a rate of 16.17 for the corresponding week in 1909. The annual death rate for the week in each of the five boroughs was as follows: Manhattan, 15.92; the Bronx, 21.01; Brooklyn, 16.01; Queens, 19.41; Richmond, 26.32. There were 121 stillbirths. The deaths of children under five years of age numbered 694; 523 under one year of age, 103 between one and two years of age, and 68 between two and five years of age. The deaths from diarrhœal diseases under five years of age numbered 389; over five years of age, 414. There were 17 deaths from sunstroke, 24 from suicide, 5 from homicide, and 87 due to accidents. Two thousand seven hundred and fifty births and 1,095 marriages were reported during the wek.

The Health of Chicago.—During the week ending July 23, 1910, the following new cases of and deaths from transmissible diseases were reported to the Department of Health of Chicago: Typhoid fever, 35 cases, 5 deaths; measles, 134 cases, 4 deaths; German measles, 3 cases, 0 deaths; whooping cough, 63 cases, 3 deaths; scarlet fever, 61 cases, 3 deaths; diphtheria, 94 cases, 15 deaths; chickenpox, 5 cases, 0 deaths; tuberculosis, 130 cases, 70 deaths; pneumonia, 15 cases, 40 deaths; tetanus, 1 case, 0 deaths; cerebrospinal fever, 1 case, 0 deaths. Seven cases of contagious diseases of minor importance and seven cases of diarrhœal diseases were also reported, making a total of 556 cases reported. The deaths under two years of age from diarrhœal diseases numbered 139. There were three deaths from sunstroke and 42 deaths from congenital defects and accidents. The total deaths of children under five years of age numbered 255, of whom 189 were under one year of age. The total deaths from all causes, exclusive of stillbirths, numbered 585, corresponding to an annual death rate of 13.4 in a thousand of population, as compared with a death rate of 14.8 for the preceding week, and 12.5 for the corresponding week in 1909.

The American Association for the Study and Prevention of Infant Mortality will hold its first annual meeting in Baltimore on November 9th, 10th, and 11th. The headquarters of the association will be in the Medical and Chirurgical Faculty Building, 1211 Cathedral Street, Baltimore. A feature of the programme which will prove of interest is a special report on birth registration, which is being prepared under the direction of Dr. Cressy L. Wilbur, chief of the division of vital statistics of the Bureau of the Census, Washington. This report will be presented at the meeting of the section on Municipal, State, and Federal Prevention. Other members of the Committee on Birth Registration besides Dr. Wilbur are Dr. Wilmer R. Batt, Commissioner of Vital Statistics, Harrisburg, Pa.; Dr. Charles V. Chapin, Commissioner of Health, Providence, R. I.; Dr. John S. Fulton, of Washington, D. C.; Dr. John N. Hurty, Secretary of the State Board of Health, Indianapolis, Ind.; and Dr. William C. Woodward, Health Officer, Washington, D. C. The work of the association has been divided into four sections as follows: Municipal, State, and Federal Prevention, Dr. William H. Welch, of Baltimore, chairman, and Dr. John S. Fulton, secretary; Medical Prevention, Dr. L. Emmett Holt, of New York, chairman, and Dr. Philip Van Ingen, of New York, secretary; Educational Prevention, Dr. Helen C. Putnam, of Providence, chairman, and Professor Abby L. Marlatt, of Madison, Wis., secretary; Philanthropic Prevention, Dr. Hastings H. Hart, of New York, chairman, and Mr. Sherman C. Kingsley, of Chicago, secretary. The officers of the association are: President, Dr. J. H. Mason Knox, Jr., of Baltimore; president-elect, Professor Charles Richmond Henderson, of Chicago; first vice-president, Professor C. E. A. Winslow, of Boston; second vice-president, Mr. Homer Folks, of New York; secretary, Dr. Linnæus E. La Fetra, of New York; treasurer, Mr. Austin McLanahan, of Baltimore. For further information, circulars, etc., write to the executive secretary, Gertrude B. Knipp.

Gifts and Bequests to Charity.—The will of Mrs. Henriette Seligman, who died recently in New York, includes a bequest of $1,000 to Mount Sinai Hospital and $500 to the Montefiore Home.

The board of directors of the Chambersburg, Pa., Hospital, has announced the gift of the interest annually on $5,000 from Mrs. Derbyshire, of Philadelphia. The first year's interest has already been received. The fund is to be used to maintain a free private room in the hospital, as a memorial to Mr. Derbyshire.

By the will of Mrs. Margaret A. Bromley, the Babies' Hospital, of New York, will receive $3,000.

By the will of the late Peter Fenelon Collier, who died on April 24, 1909, bequests of $2,000 each were made to St. Joseph's Roman Catholic Hospital, Syracuse, N. Y., and to the Hospital for Incurable Consumptives in the Bronx, New York.

The Monmouth Memorial Hospital, Monmouth, N. J., received from Mr. J. Addison Woolley, of New York, a gift of $12,000, to be used in building an addition to the Nurses' Home. A gift of $5,000 from Mr. Charles A. Wimpfheimer, of New York, was also received.

The following bequests are included in the will of the late Elizabeth C. Burkhardt, of Philadelphia: To the Philadelphia Home for Incurables, $3,000; to the Hahnemann Medical College and Hospital, Philadelphia, $3,000.

By the will of Mary E. Leavitt, who died in New York on June 20th, the Sheltering Arms will receive $3,000, to establish a free bed in memory of her mother, and St. Luke's Hospital will receive $7,500 for a similar purpose.

By the will of James Rogers Rich, late of Boston, the following bequests will take effect upon the death of certain beneficiaries: The Children's Hospital, Boston, $5,000; the House of the Good Samaritan, $5,000; Industrial School for Crippled and Deformed Children, $2,000; Children's Island Sanatorium, $2,500.

By the will of Mrs. Mary W. Frothingham, late of Cambridge, Mass., the Cambridge Hospital and the Cambridge Home for Aged People will each receive $1,000, and the Home for Aged Women in Charlestown will receive $500.

Mr. Nahum P. Kingsley, of Rutland, Vt., has given $4,000 to the Rutland Hospital Association, in memory of his wife, the money to be used in building an addition to the hospital, to be used as an operating room.

Pith of Current Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL

July 21, 1910.

1. On the Ætiology and Treatment of Psychoneuroses, By James J. Putnam.
2. A Contribution to Ætiology of Actinomycosis. The Experimental Production of Actinomycosis in Guineapigs Inoculated with the Contents of Carious Teeth, By Frederick T. Lord.
3. The Diagnosis of Stone in the Pelvic Portion of the Ureter, By Hugh Cabot and W. J. Dodd.
4. Pregnancy, Nursing, and the Care of Young Infants. An Experiment in Preventive Medicine. By Mrs. William Lowell Putnam.
5. Lesion of the Major Trunk Viscera in Epileptics, By A. E. Taft.
6. Suture of the Faucial Pillars for Hæmorrhage Following Tonsillectomy, By R. H. Gilpatrick.

2. Actinomycosis Produced in Guineapigs Inoculated with Contents of Carious Teeth.—Lord found that organisms having the morphology and staining reaction of actinomyces have been constantly found in smear preparations and in serial sections of the contents of carious teeth from individuals without actinomycosis. They are present in such numbers as to suggest that they play a fundamental part in dental caries. Following the intraperitoneal inoculation of guinea pigs with the contents of carious teeth, omental tumors histologically identical with actinomycotic tissue and containing typical club bearing actinomyces granules, have been produced in three of five animals. The constancy with which organisms having the morphology and staining reaction of actinomyces are present in carious teeth suggests that under certain conditions actinomycosis may develop in persons with carious teeth. Lack of free drainage of a tooth cavity whether arising spontaneously or as the result of filling an incompletely sterilized tooth may be regarded as favorable to the production of the disease about the jaws or neck. In such cases the root canal of the tooth is the channel of infection. Organisms derived from the teeth may also be implanted in neighboring tissues or find lodgment in more remote parts of the body by way of the respiratory tract or the alimentary canal. Local injury of the tissue may be regarded as an important predisposing factor. Although actinomycosis is doubtless more common than is generally believed, it cannot be regarded as of frequent occurrence. In explanation of its infrequency compared with the numberless chances for infection it may be suggested that invasion of the tissues by actinomyces and associated bacteria does not always give rise to actinomycosis. It is probable that only in a small proportion of cases in which implantation of the organism occurs does it actually take root in the tissue and lead to progressive lesions, with club bearing actinomyces granules.

5. Lesions of the Major Trunk Viscera in Epileptics.—Taft has collected notes on fifty epileptics showing lesions of the major trunk viscera.

6. Suture of Faucial Pillars for Hæmorrhage Following Tonsillectomy.—Gilpatrick says that suture of faucial pillars for hæmorrhage following tonsillectomy has usually to be done without anæsthesia, and the condition of the patient is often such that none is needed. The choice of position in

which the patient is best put rests on the individual operator and the circumstances. He uses the Rose position with satisfaction. Good light is of course necessary. In the Rose position the patient's head is but little elevated above the chest, which point is worth considering in a nearly exsanguinated patient. At the same time, less blood and mucus are likely to be inhaled. The jaws must be opened to their full extent, and the tongue kept on the floor of the mouth. This is best done with the Whitehead self retaining gag with attached tongue depressor. A small, round pointed, fishhook shaped needle is threaded with black linen or silk. The thread should be about eighteen inches in length. A long shanked Mayo needle holder has proved adaptable. When the suture is ready to be placed, the pharynx is quickly wiped out and an ordinary right angled metal tongue depressor introduced so that its tip presses against the base of the tongue just at the lowest point of the faucial pillars and away from the side being operated upon. This gives a view of the point at which the first bite of the needle should be made. The point of the needle is carried behind the lowest portion of the posterior pillar and is introduced forward through both pillars, taking enough tissue to insure its not tearing out. The needle is pulled through, leaving the tail of the suture sufficiently long to reach beyond the incisors where it is twisted with the main portion of the suture between the thumb and forefinger. A perforated shot is now slipped over the needle and tail of the suture and the shot grasped in the jaws of the needle holder. One hand holds the twisted suture taut while the other, grasping the needle holder, forces the shot against the point of suture of the pillars and crushes it upon the thread. The tail of the suture is now forced between two convenient teeth and the suture continued as a running, over and over, to the other end of the pillars. The bites should be about a quarter of an inch apart and should include sufficient tissue to prevent tearing out. The tail of the suture has been left long, the suture drawn tight, and the head and tail of the suture twisted together as before. Another perforated shot is slipped over the needle, grasped in the holder, forced against the point of suture of the pillars and crushed. If the ends of the suture are left permanently long and secured to teeth, it will do away with the possibility of the shot dropping into the larynx in case the suture should break or tear out.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

July 30, 1910.

1. Treatment of Localized Appendicular Abscess, By Van Buren Knott.
2. Amyotonia Congenita: The Report of a Case with Muscle Biopsy, By A. L. Skoog.
3. Acute Yellow Atrophy of the Liver. A Case Following Two Chloroform Anæsthesias in Quick Succession in a Pregnant Woman, By O. S. McCown and Bryce W. Fontaine.
4. A Method of Determining Ocular Dominance, By A. C. Durand and George M. Gould.
5. Cryptophthalmia, with Report of Two Cases, By David H. Coover.
6. A Bilateral Herpes Zoster. Report of Case, By Henry Rockwell Varney and R. C. Jamieson.
7. Action of Alcohol on the Normal, Intact, Unanæsthetized Animal, By Clyde Brooks.
8. Report of the Committee on Collective Investigation Concerning the Ocular Muscles, By Lucien Howe, Howard F. Hansell, and Theodore B. Schneideman.
9. The Ocular Palsies Associated with the Induction of Spinal Anæsthesia by Various Solutions with a Report of Five Cases, By Wendell Reber.
10. The Danger of Sympathetic Ophthalmia from the Use of the Cautery in Treating Iris Prolapse. Other Methods of Treatment, By H. Gifford.
11. The Influence of Diet on the Chyle, By Winfield S. Hall.
12. The Dependence of Neurology on Internal Medicine. A Plea for the Establishment of Neurological Hospitals and Neurological Wards in General Hospitals, By Joseph Collins and Pierce Bailey.
13. The State Care of the Inebriate, By Irwin H. Neff.
14. Serum Treatment of Hæmorrhagic Disease of the New Born, with Report of Three Cases, By Edward B. Bigelow.

3. Acute Yellow Atrophy of the Liver from Chloroform Anæsthesia.—McCown and Fontaine report the case of an unmarried negro woman, pregnant at the third month, who, upon examination, showed that she had had an incomplete abortion, and who denied having used artificial means to produce the abortion. The bleeding was stopped under chloroform anæsthesia, but as the pains continued she was again chloroformed, the tampon was removed, a curettement was done. Each anæsthesia was of about twenty-five minutes' duration. Forty-eight hours after curettement jaundice developed with nausea, vomiting, rapid pulse, and delirium. Convulsions followed with coma, and death occurred five days after curettement. At autopsy the deeper tissues were found bile stained. Mesentery, omentum, and intestines were bile stained. The liver was about two thirds normal size. Surface smooth and presenting a uniformly yellow brown color, spotted with areas of hæmorrhage varying in size from a split pea to a twenty-five cent piece. Section showed parenchyma of the same appearance as surface. Consistency was almost diffluent; no resemblance at all to normal liver tissue, appearance seemed uniform throughout both lobes. The gallbladder was about half full of yellowish green bile. Biie ducts were patent. Spleen was enlarged to about twice normal size, soft in consistency, heavier than normal, dark red in color; section had the appearance of an acute splenic tumor. Kidneys were increased one third in size. Soft in consistency; dark in color, with areas of hæmorrhage beneath capsule; capsule easily stripped; section showed surface dripping with blood; cortex swollen to twice normal size; absence of striations in cortex and medulla; venules prominent; pelvis and ureter normal. Pancreas and pelvic organs apparently normal, except for increase in size of uterus. Bladder empty. The author thinks that there is little reason to doubt that the anæsthetizing with chloroform was the exciting if not the entire cause of the extensive degeneration of the liver which presented the appearance of an acute yellow atrophy.

6. Bilateral Herpes Zoster.—Varney and Jamieson report a case of bilateral herpes zoster in a patient without a history of syphilitic infection, and in whom not a single trace of syphilis could be found clinically.

7. Action of Alcohol on the Normal, Intact, Unanæsthetized Animal.—Brooks's report con-

cerns a series of manometric blood pressure tracings showing the effect of alcohol on an animal not under the influence of any anæsthetic. The alcohol was administered by three different modes, namely, by mouth, by intravenous injection, and by gastric fistula. The primary action of alcohol varies according to the mode of administration: By mouth it causes a marked rise in blood pressure with increased amplitude and a constant, or slightly slowed rhythm of heart beat. This rise gradually passes off in five or ten minutes. In some instances, at the time of pouring the alcohol into the dog's throat and just preceding the rise mentioned, there is a sudden drop and almost immediate recovery of blood pressure. When administered intravenously, alcohol causes a sharp drop in blood pressure during which the heart is greatly slowed or almost stopped; but very soon, unless the dose is too large, there follows a rapid recovery. By gastric fistula there is no specific primary action. By whatever method administered, alcohol, when circulating in the blood stream, causes a gradual, progressive lowering of blood pressure with decrease in amplitude but increase in rate of heart beat. This he regards as the true pharmacological action of alcohol on the blood pressure of the intact unanæsthetized animal.

11. **The Influence of Diet on the Chyle.**—Hall remarks that the fat content of the chyle varies greatly with the diet; the protein varies moderately, while the sugar varies only slightly. From these facts he believes that we are justified in assuming that not only are the fats absorbed by way of the lacteals, but the proteins also are in part absorbed by way of the lacteals. With equal force it may be said that the sugar is not absorbed by the lacteals, but the trace uniformly found is that which is incident to tissue fluids generally and gets into the thoracic duct from tissue lymph vessels. He proposes that we recognize a special subclass of ascites chylosus which might properly be called "traumatic chylorrhagia," whose diagnostic characteristics would be, rapid collection of chyle, pure or tinged with blood, immediately following the injury, and suggests the following physiological method of determining whether or not, in cases of traumatic chylorrhagia, all, or only a part, of the chyle is escaping: After a fast day give by mouth a one day diet rich in fat; determine fat in diet, in chyle, and in fæces. If that found in chyle and fæces falls appreciably short of that exhibited in the diet, one may conclude that not all of the chyle is escaping. The smaller the proportion of escape, the better the prognosis.

14. **Serum Treatment of Hæmorrhagic Disease of the New Born.**—Bigelow treated three new born infants suffering with hæmorrhage with serum. Two of these patients were apparently moribund when the serum was administered. The second case had not progressed so far as the other two, but was to be considered serious also, for previous to the injection the bowels had moved each hour for nine hours with large results of dark, tarry, meconiumlike material and bright red blood, and on the sixth day the baby weighed twenty-four ounces less than at birth, a portion of which large loss certainly could be attributed to the hæmorrhage. Although in general it is recognized that this hæmorrhagic condition is self limited in twenty-five per cent. of the cases, and possibly any one of these patients might have recovered without the serum, the sequence of recoveries in three serious cases should be ascribed to the action of the serum. The most impressive fact to the observer in each case was the almost immediate control of the hæmorrhage after the administration of the serum. This was shown directly from observation of the umbilicus in the first case, and the nose in the third, while indirectly in all three by the absence or marked diminution of normal blood in the stools, although for the following two or three days each baby did have a tarlike material in the stool, suggestive of old blood; but no tests were made at the time to prove this. The amount administered in each case was 5 c.c. of clear rabbit serum, injected immediately after procuring it from the animal. In the first case this dose was repeated in twelve hours, although there was no sign of a fresh hæmorrhage at that time, and it seemed to have been uncalled for in present consideration of the case. The serum in these cases gave absolutely no untoward symptoms. No lesion of the skin, swelling of the lymph glands, or œdema was noted.

MEDICAL RECORD.

July 30, 1910.

1. Ventilation in Schools, By W. A. Evans.
2. Tendon Transfer for Correction of Spastic Hand Deformity, By Charles N. Dowd.
3. The Use of Vaccines, Sera, and the Hiss Extract of Leucocytes in the Treatment of Eye, Ear, Nose, and Throat Infections. With Reports of Cases, By J. G. Dwyer.
4. A Simple Complement Fixation Technique in Syphilis —Report of Cases, By Alexander Fleming and Frank J. Clemenger.
5. In What Way Can Laryngology Aid in Making the Diagnosis of Incipient Pulmonary Tuberculosis? By Wolff Freudenthal.
6. A Case of Pellagra in Illinois, By William Francis Waugh.
7. A Useful Accessory in the Treatment of Varicose Ulcers, By Eugene H. Pool.
8. A Case of Urticaria Caused by the Sun's Rays, By B. F. Ochs.

1. **Ventilation in Schools.**—Evans proposes to reduce the temperature of the school rooms to a maximum of 68° F. This temperature is more bracing. In such a temperature the exhaled air, being hot and moist, will rise right out of the breathing zone and be replaced by purer air. The humidity should be raised. No possible objection can be raised to this except that it costs money to evaporate water and the windows will frost when the outside temperature gets to 20° F. and below. The best way to humidify is to introduce a spray of steam into the column of incoming air, if the air is to be pumped in. If the humidity is raised to 60° F., the pupils will be comfortable with a temperature of 68° F. What is saved on coal, as between 72° F. and 68° F., will more than compensate for the steam which is used to humidify. Some of the frosting of the windows can be prevented by putting a radiator under each window. In certain rare instances a fan throwing enough air against the glass to keep it warm can be used to prevent frosting. If the air is brought into the room through the radiators, it can be humidified by pans of water or by some of the patent humidifiers. The air in the room should

be blown out at stated intervals. This is best done by raising the windows and allowing the air to blow briskly through. A change of the air four times an hour will be effected by currents which are so mild that they will not lift bacteria. In consequence the bacterial flora of the air neither decreases nor increases unless it is being modified by animal inhabitation. If, however, the wind blows briskly in and out through windows, the bacterial flora of the air will be reduced ninety-nine per cent. Practically, the way to effect this is to have the teacher throw up the windows when the children go out at recess. When they return they are warm, they have just made heat by exercising. By the time their heat equilibrium has returned to normal the heat equilibrium of the room will have been re-established. The dust content of the air of the school room should be decreased by having the students at the blackboards use an eraser which is very slightly damp. A piece of cheesecloth fastened over the eraser does well; or the fat can be extracted from an ordinary eraser by ether or naphtha. If the eraser is too moist the board dries slowly. The air should be introduced into the room in such a way as to keep the expired air as much separated from the fresh air as possible. This means direct removal of the air from the breathing zone. This cannot be done if the room is heated and ventilated by the same air. Such air is introduced at from 110° F. to 130° F. If it was introduced near the floor and the outlets were placed near the ceiling the hot air would rush straight from the inlet to the outlet and it would be very difficult to prevent great loss of heat. The only feasible thing to do when heating and ventilation is done with the same air is to put the hot air in high and take it out low. The more rational plan is to have the air enter directly from the outside through holes in the walls; these holes to be closed by adjustable diaphragms. The air should pass directly through radiators and be discharged into the room at such a temperature as to maintain a temperature of from 65° F. to 68° F.; other radiation to be a hot water or steam gravity system. The radiators should have water evaporating attachments. The air should be introduced into the room at several different points through ducts inside the room, with many openings in the ducts; the exits to be on the inner walls at, in, or near the ceiling; the gathering ducts to lead to the attic with the smallest possible number of turns or angles.

3. **The Use of Vaccines, Sera, and the Hiss Extract of Leucocytes in the Treatment of Eye, Ear, Nose, and Throat Infections.**—Dwyer observes that in acute constitutional diseases, such as pyæmia, septichæmia, and sapræmia, the vaccines are contraindicated. In such cases the leucocyte extract finds its greatest field of usefulness and will often save cases which are apparently hopeless. In the locally acute (without systemic symptoms), subacute, and chronic cases, the vaccines find their greatest field of usefulness and will be found to act almost as specifics. In all cases use autogenous vaccines in preference to stock ones, as the results will be better and surer, and the administrator knows exactly what he is administering. Make fresh vaccines frequently, so as to ensure their greatest potency. Be guided in the administration by the clinical symptoms, but at the same time do not neglect to calculate the opsonic index. In the majority of cases it is just as reliable as a blood count is. Do not use tuberculin in tuberculosis when general constitutional symptoms are present, that is, when the patient is in the pyrexial stage. First, localize the process as much as possible and then start the treatment, interrupting it if the condition again becomes general. Give small doses often repeated, rather than large doses seldom repeated. In all cases start in with a minimal dose and then increase it. Always combine with the vaccine treatment the other general medicinal and hygienic measures. This vaccine therapy is not a cure all.

4. **A Simple Complement Fixation in Syphilis.**—Fleming recommends the use of sheep blood corpuscles in complement fixations in syphilis. To standardize the extract, and also for the purpose of doing the actual test, one uses, in the place of ordinary test tubes, small tubes of similar shape which are made by drawing out in the blow flame pieces of glass tubing one inch long, which are sealed at both ends. These are then notched with a file and when broken make a pair of miniature test tubes. These tubes are put up in two rows, of five tubes each, and into the first tube of each row is put four volumes (each volume representing 10 c.c., but exact standard is immaterial) of a 2.5 per cent. solution of the extract in 1 per cent. salt. Into the next tube of each row is put four volumes of a 5 per cent. solution of the extract, and so on, with the strengths of 7.5, 10, and 15 per cent. Into each tube of one row is now put one volume of a syphilitic serum, and into each of the tubes of the other row is put one volume of normal serum. The contents of the tubes are now thoroughly mixed by inverting several times, and they are incubated at 37° C. for one hour. At the end of this time they are taken out of the incubator and to each tube is added one volume of the 10 per cent. suspension of sheep corpuscles, after which they are then incubated for another hour. It will then be seen that in the case of the syphilitic serum, in all, except, perhaps, the lowest one, or possibly two dilutions, there will be no hæmolysis owing to the fixation of the complement by the extract and the specific amboceptor, while in the case of the normal serum there will be hæmolysis in all the tubes except perhaps that containing the strongest dilution. The strength which should be chosen, as determined by this test, is the strongest which will completely inhibit hæmolysis with the syphilitic serum without interfering with the hæmolytic power of the normal serum.

BRITISH MEDICAL JOURNAL.

July 16, 1910.

1. The True Aim of a United Medical Profession and the Handicap of the Trade Union Bogey. By Lauriston E. Shaw.
2. Principles of Practice in Relation to our Patients. By R. J. Pye-Smith.
3. Fifty Years of Medical and Surgical Progress and the Part Played in It by Experimental Research. By C. H. Allfrey.
4. After Ten Years. By W. H. Maidlow.
5. The Country Practitioner of To-day. By S. Hale Puckle.
6. On the Working of the Workmen's Compensation Act of 1906. By W. H. B. Brook.

7. The Doctor and the Public, By S. Noy Scott.
8. The Future Prospects and Position of the Medical Profession under Poor Law Commission Reports and Proposals, and a Public Medical Service, By Michael Dewar.

1-7. These seven essays represent presidential addresses delivered at the branches of the British Medical Association.

8. The Prospects and Position of the Medical Profession.—Dewar reviews the present British legislative tendency in its medical aspects and the probable prospects and position of the medical profession in the near future.

LANCET

July 16, 1910.

1. Epilepsy, By William Aldren Turner.
2. Behavior of the Leucocytes in Infection and Immunity, By F. W. Andrewes.
3. The Aspects of Disease, By Warrington Haward.
4. Administrative Control of Pulmonary Phthisis in Scotland, By W. Leslie Mackenzie.
5. Preventive Measures and the Administrative Control of Tuberculosis, By Edward W. Hope.
6. Preventive Measures and the Administrative Control of Tuberculosis, By H. Scurfield.
7. Pulmonary Tuberculosis as a Problem of Administration: The Economics of Phthisis, By A. K. Chalmers.
8. A Recruiting Officer's Notes on the Prevalence of Certain Diseases in Egypt, By G. W. G. Hughes.

1. Epilepsy.—Turner, in his Morison lectures on epilepsy, speaks also of the pathological anatomy in epileptics. He says that it is difficult to obtain post mortem examinations on recent cases of the disease or on those cases characterized by seizures occurring only at long intervals. It appears as if genuine epilepsy is a disease which in its early stages is unassociated with any obvious structural changes in the brain or central nervous system. In old standing cases, however, the morbid changes found after death are well recognized and have been described by numerous writers. Dr. John Turner has found atrophy and sclerosis of some part of the central nervous system in considerably more than fifty per cent. of the cases of idiopathic epilepsy. Alzheimer found acute and chronic changes in sixty per cent. of all cases examined. In the nerve cells the changes vary from slight degrees of chromatolysis to advanced atrophic degeneration. The extent of the change would seem to depend largely, if not entirely, upon the mode of death. Certain nerve cells, showing well marked eccentration of the nucleus, which is usually of a globose character, are regarded as being typical of low grade brains and to represent an embryonic type of nerve cell. The vascular changes consist of dilatation and atrophy of the bloodvessel walls, perivascular infiltrations, and punctiform hæmorrhages. The lymph spaces are dilated and contain a foamlike exudate. Hyaline spheres or lobulated bodies are seen lying free in the lumen of the smaller vessels and capillaries, and sometimes large hyaline masses form casts of the vessels in which they lie. In neuroglia there is an increase of the glial tissue, especially that situated in the outer layers of the cortex, and of the cornu Ammonis. The meninges generally show slight fibroid thickening and a moderate leucocyte infiltration. Rupture of the vessels with extravasation of red blood corpuscles and a delicate unorganized foamlike exudate are always present. The lesions found in the brains of epileptics are of wide distribution. The cerebellar membranes are often more affected than the cerebral. The glial changes are distributed unevenly over the whole surface of the cerebrum, but some regions are more especially involved—viz., the frontal and occipital regions, the cornu Ammonis, and the gyri around the fissure of Rolando. It is now the generally accepted view that such changes are the effects, and not the cause, of the seizures. The acute or cell changes vary according to the manner of death, and the chronic or glial changes are dependent to a great degree upon the duration and severity of the disease. The most acute changes are found in the brains of persons dying in the status epilepticus, and the most pronounced degrees of gliosis are observed in the brains of those in whom the disease was of long standing and characterized by the severer grades of mental deficiency and dementia. Frequent repetition of epileptic fits brings about destructive changes in the nerve cells and fibres, whose place is taken by proliferated neuroglial elements.

2. The Leucocytes in Infection and Immunity.—Andrews, in his fourth Croonian lecture, speaks of the bone marrow as the mother tissue from which the polynuclear leucocytes are derived; this tissue must play an important part in the defense of the body; and Ehrlich has called it a "defensive organ." The general conclusion to which observations have led our author is that infection by, and vaccination with, the pyogenic cocci lead in a few days to a neutrophilleucoblastic reaction in the bone marrow, pointing to the polynuclear leucocyte as the main element in defense. Andrews then takes up the changes in the bone marrow in infections other than those due to the pyogenic cocci such as tubercle bacillus, the typhoid bacillus, and *Bacillus coli*. Here the marrow appeared in all respects normal. We have thus, he concludes, in the pyogenic cocci, in the members of the colon bacillus group, and in the microbes of tubercle and probably also of syphilis, examples of microorganisms against which the body seems to defend itself in very different fashion. So far as the polynuclear leucocytes are concerned, we seem entitled to conclude that these cells are of fundamental importance in defense against the pyogenic cocci, of merely secondary importance in the case of the colon group, while in tubercle and syphilis they seem to play almost no part at all.

4, 5, 6, 7. Control of Tuberculosis in Great Britain.—Mackenzie, Hope, and Chalmers speak of the preventive measures and administrative control of pulmonary phthisis in Scotland, while Scurfield treats of the measures applied in Sheffield, England.

8. Prevalence of Certain Diseases in Egypt.—Hughes has made notes as medical recruiting examiner from observations on Egyptian conscripts. He thus examined carefully 2,600 men, and of these he found sixty-five per cent. had some obvious gross lesion of the eye. Favus of the scalp is met with in about fourteen per cent. of the men. Ankylostomia and ophthalmia are the most common diseases in Egypt. Cirrhotic livers are fairly common among children. Caries of teeth was found in eighty-three per cent. of the men. Injuries to the elbow are very frequent, especially fractures of the

lower end of the humerus, and of the condyles, dislocation of the lower epiphysis of the humerus, and ankylosis of the elbow joint.

BERLINER KLINISCHE WOCHENSCHRIFT.

June 20, 1910.

1. The Feeding of Children with Gastrointestinal Disease with Egg Albuminized Milk (*Eiweissmilch*), By H. Finkelstein and L. F. Meier.
2. Experimental Syphilis in Rabbits and Monkeys, By Uhlenhuth and Mulzer.
3. Suction Drainage of the Pleural Cavity, By Fritz Haertel.
4. Hernia Diaphragmatica Dextra, By Hans Dietlen and Georg Knierim.
5. Semilateral Lymph Stasis in Diseases of the Lungs or Pleuræ, By M. Boenniger.
6. A New Sphygmograph, By R. du Bois-Reymond.
7. Ether Acetonic Combination of the Antiformin Method, By Koslow.
8. The Malaria Conference at Simla in October, 1909, By Hoffmann.

1. The Feeding of Children with Gastrointestinal Disease.—Finkelstein and Meier ferment a litre of milk and then filter it so as to separate the curd from the whey. The casein and fat are then finely emulsified in one half litre of water to which one half litre of buttermilk is added. The mixture thus formed they call *Eiweissmilch;* it contains a minimum amount of milk sugar, a small amount of salts, and an increased proportion of casein and fat. They state that it is the most certain remedy we yet have for all gastrointestinal diseases in children.

2. Experimental Syphilis. — Uhlenhuth and Mulzer find that rabbits are better suited for studies of this nature than other animals, including the lower monkeys. Their studies are not yet finished, but they have arrived at the conclusion that the *Spirochæta pallida* is more resistant to chemical influences than has hitherto been supposed.

3. Suction Drainage of the Pleural Cavity.—Haertel advocates the use of a modification of Perthes apparatus for suction drainage to be worn by ambulant patients after resection of the rib for empyema as well as after thoracoplastic operation when fistulæ remain. He reports several cases, in one of which the result was excellent and in two much improvement was obtained.

MILITARY SURGEON.

July, 1910.

1. Observations on the Medical and Sanitary Department of the Panama Canal Commission during My Visits to the Isthmus the First Week in March and at the End of April and the Beginning of May, 1910, By Henry S. Wellcome.
2. Experience versus Theory in the Explanation of the Nature and Treatment of Gunshot Wounds, especially Those Inflicted by Modern Military Small Calibre Projectiles, By C. B. G. de Nancrede.
3. The Ration in the Tropics, By F. M. Munson.
4. The Work of the Board for the Study of Tropical Diseases in the Philippines, By James M. Phalen and E. L. Kilbourne.
5. Some Suggestions for Increasing the Efficiency of the Ambulance Company, By Garfield L. McKinney.
6. Experiences of the Spanish-American War from a Different Viewpoint than Major Nancrede, By Joseph Melton Heller.
7. The Ant as a Destroyer of Flies, By Percy L. Jones.
8. Painful Heel in Arthritis Resulting from Various Causes, By Elmer S. Tenney.

2. Gunshot Wounds.—De Nancrede says that it must constantly be borne in mind, when considering the wounds inflicted by modern small arm projectiles, that they are not balls, but bolts projected endwise, whose inevitable tendency, unless this is counteracted, is to revolve around the shorter axis. At every portion of the projectile's flight this tendency exists, if the force which prevents it from rotating around the shorter axis is partially or totally suspended. The force which maintains the bullet in its flight endwise, is the rotation around its long axis imparted by the rifling, and the speed of this rotation steadily diminished from atmospheric resistance as the distance from the muzzle of the weapon increases; in other words, it is certainly diminished at least in proportion to the lessened rate at which the bolt must move onward in space, because of the atmospheric resistance to its forward flight. Marked diminution of the rapidity of evolution must determine deflection if slight resistance is met with in a direction at a trivial angle to the line of flight of the bolt. The much flatter trajectories of the Mauser, the Krag, and the last model Springfield, undoubtedly lessen the angle at which a bolt like bullet will strike an object, still it does strike at some angle. Again, tense fascia, slight contact with a bone, even tense muscle will deflect the bullets, and no one can determine their exact course, even when perforating wounds are inflicted. Lodgment of infected material and of a germ laden ball is uncommon in modern military practice. No one can affirm the absolute course pursued even by a penetrating missile, hence it is sometimes certainly permissible, and in some cases imperative to explore such wounds. The deflection of a bolt like missile striking even a vertical plane at a slight angle would in its deflection tend to pursue a course approximating the line of the resultant of the two forces, provided the resistance was equal in every direction possible for the bullet to pursue. Although this influence might be only slightly operative, as compared with the force exercised in producing the onward flight of the projectile, it often distinctly favors the deflection of any missile which, by having one axis shorter than any other, possesses an inherent tendency to rotate around this axis. The author takes up the penetrating gunshot wounds of the skull, the face, the thorax, and the abdomen.

7. The Ant as a Destroyer of Flies.—See editorial page 132, of our *Journal* of July 16, 1910.

ANNALS OF SURGERY.

July, 1910.

1. Operations upon the Hypophysis, By Freiherr von Eiselberg.
2. Tumor of the Hypophysis (with Infantilism), By Samuel J. Mixter and Alex. Quackenboss.
3. Clinical Experiences with Intratracheal Insufflation (Meltzer), with Remarks upon the Value of the Method for Thoracic Surgery, By Charles A. Elsberg.
4. The First Case of Thoracotomy in a Human Being under Anæsthesia by Intratracheal Insufflation, By Howard Lilienthal.
5. Some Observations Regarding Thoracic Surgery on Human Beings, By Willy Meyer.
6. Artificial Respiration and Intrathoracic Œsophageal Surgery, By Nathan W. Green and Henry H. Janeway.
7. Cancer of the Œsophagus and Cardia, By Henry H. Janeway and Nathan W. Green.

8. On the Experimental Surgery of the Thoracic Aorta and Heart, By Alexander Carrel.
9. Treatment of Wounds of the Heart, By Walter C. G. Kirchner.
10. Abnormal Position of the Duodenum, By George E. Armstrong.
11. End to End Intestinal Anastomosis by the Invagination Method, By Charles L. Gibson.

4. **Intratracheal Insufflation.**—Lilienthal reports two cases in which Meltzer-Auer's method of respiration by the continuous intratracheal insufflation of air was used. He concludes that the experiences with intratracheal insufflation have demonstrated that the results obtained by Meltzer and Auer, by Carrel, and by himself, in animal experiments, can also be obtained in the human being. A much larger experience is necessary before any definite statements can be made. There is every reason, however, for a thorough trial of the method. Meltzer's method of intratracheal insufflation recommends itself by its very great simplicity. If the future will show that it is as safe for the human being as it is for the animal—and experiences seem to point in that direction—then surgery will have a very simple method for the prevention of the dangers from acute pneumothorax, a danger which has been the chief hindrance to the development of intrathoracic surgery.

7. **Cancer of the Œsophagus and Cardia.**—Janeway and Green remark that the aboral end of the œsophagus and the cardiac portion of the stomach must be considered as one surgical region. Cancer in this location is by no means infrequently met with. They believe that it permits of an early diagnosis by means of the gastroscope. An operation of practical utility for resection of cardiac cancer must remove not only a portion of the œsophagus but also a considerable part of the stomach, in particular the lesser curvature. Such an operation can be accomplished without undue tension by an end to end anastomosis with suture. By an operation of this character it has been possible for them to obtain ten operative recoveries out of seventeen dogs and five out of the last six. As a preliminary report it may be stated that the death of the recovered animals about six weeks after the operation was due to an interference with the normal physiology of the pylorus, and may be prevented by simple pyloroplasty. From a technical standpoint such an operation can easily be performed upon the human being. The authors have operated upon a patient with cancer of the cardiac portion of the stomach involving the œsophagus, by this method. The patient had had symptoms for the preceding nine months, and the operation required was an unusually severe one. The spleen was involved in the carcinomatous mass and was removed in one piece together with the stomach and lower portion of the œsophagus. The patient died fifty-four hours after operation, of empyema, starting, apparently, in a small perforation situated in the circle of anastomosis, a complication which can be more carefully guarded against in the future. This experience, however, and the condition of the specimen removed demonstrate that the technique employed was satisfactory and that the operation is feasible and justifiable.

8. **Experimental Surgery of Aorta and Heart.**—Carrel concludes that the general technique of intrathoracic operations has been improved by the use of a better asepsis and of the Meltzer and Auer method of pulmonary ventilation. Two methods for the diversion of the blood during the operation on the thoracic aorta have been found,—intubation and lateral diversion. For the first time, it has been possible to perform with permanent success a suture of the ascending aorta, several end to end anastomoses of the descending aorta, and the grafting on the descending aorta of a segment of vein preserved in cold storage. It has been attempted also to find and to study new cardiac operations, and the conditions under which they must be performed. The technique of these operations is far from being completely developed. They must not be used on human beings under their present form. Their purpose was only to study some of the principles on which must be based the future surgery of the thoracic aorta and of the heart.

AMERICAN JOURNAL OF SURGERY.

July, 1910.

1. Local Anæsthesia, By Arthur E. Hertzler.
2. Preliminary Report on the Treatment of Bladder Tumors by the High Frequency Current, By E. L. Keyes.
3. Urinary Calculi; Casuistic Memoranda, By Walter M. Brickner.
4. Surgery of Posterior Urethral and Prostatic Abscess and Their Resulting Fistulæ, By Benjamin Merrill Ricketts.
5. "Meatitis Erosiva Puerporum," By Hermann Goldenberg.
6. The End Results of Prostatectomy, By J. Bentley Squier.
7. Combined Cauterization and Curetting as a Treatment of Chancroids, By Victor C. Pedersen and Edward H. Marsh.
8. A Case of Accidental Cauterization of the Male Urethra with a Concentrated Silver Nitrate Solution; Complete Recovery, By Abraham L. Wolbarst.
9. Apparently Cured Cases of Gonorrhœa with Persistence of Gonococci, By Charles S. Stern.
10. New Instruments for Throat Work, By Harold Hays.

2. **Bladder Tumors.**—Keyes, in a preliminary report, describes his method for the intravesical treatment of bladder tumors. He uses Beer's apparatus, which consists of a small insulated cable about the size of a No. 6 ureter catheter, and, therefore, fitted for employment through any modern catheterizing cystoscope. This wire is attached to a high frequency current apparatus, introduced into the bladder through the cystoscope and manipulated therein after the manner of the ureter catheter. Keyes used the D'Arsonval or double pole current. At first he placed only one pole in the bladder, leaving the other pole in the patient's hand. But latterly he placed both poles in the bladder, tying the ends together, and using them as a double ureter catheter. It is, of course, not necessary to tie the ends together, but as this gives a relatively fixed spark gap, it seemed better to do so. Later, he has used the Oudin, or single pole high frequency current with good success. The wires must be in absolute contact with the tumor; one gets as near the base of the tumor as practicable, plunges the wires in, and then turns on the current. The duration of the burning varies with each case. By the time one has made ten or twenty burns the fluid

in the bladder is usually pretty well clouded, and the patient quite satisfied to close the proceedings for that sitting. The average duration of burns has been from five to ten seconds. Keyes has thus treated five patients, and reports one case in full.

3. **Urinary Calculi.**—Brickner reports some cases which he uses as illustrations for his subject: Confounding of appendicular inflammation with urinary calculus in making a diagnosis; lithiasis with scant and vague symptoms; ureteral calculus complicating prostatic obstruction; and posterior lumbar incision for ureterolithotomy.

8. **Cauterization of the Urethra.**—Wolbarst reports a case of accidental cauterization of the male urethra with a concentrated silver nitrate solution, followed by complete recovery. He concludes: The patient did not feel any pain at the time of the injection. The urine remained clear and the patient was free from all symptoms for four days after the injection. The soluble medicated bougies served admirably the double purpose of dilating the urethral canal and keeping it lubricated. In spite of the extensive destruction of the urethral mucosa, a new mucous membrane formed on the site of the original. Contraction took place, not in the entire canal, but at two points only. The slough came out en masse, rather than in the form of detritus.

INTERSTATE MEDICAL JOURNAL.

July, 1910.

1. The Diagnosis of Mitral Stenosis, By Joseph M. Patton.
2. A Preliminary Study of the Poisonous Scorpion, Including a Review of Some Recent Literature and Personal Experiences, By H. V. Jackson.
3. The Ætiology of Epidermidolysis Bullosa, By M. F. Engman and W. H. Mook.
4. Hyperæsthetic Rhinitis (Hay Fever), By Otto J. Stein.
5. The Diagnosis and Pathological Findings in an Unusual Case of Epithelioma of the Larynx, By D. Bryson Delavan.
6. Gonorrhœal Vulvovaginitis; Its Specific Treatment and Prophylaxis, By William J. Butler.
7. Differential Points in the Character of the Bone Lesion in the Tuberculous and Acute Osteomyelitis, Rachitis, and Syphilis, By Alexander Earle Horwitz.

2. **Study of Scorpion.**—Jackson speaks of the Durango scorpion, a particularly poisonous variety of this arachnidean. It is a light colored, long tailed scorpion, *Centruroides exilicauda*, Wood, about five centimetres in length; the head is united to the thorax forming a quadrangular body, in which are found eight eyes divided into three groups, two of the three small ones being situated at the sides and above, and another of two larger ones found about three millimetres from where the head begins. This disposition of the eyes permits the scorpion to see in diverse directions at the same time without making the least movement. The popular remedy for the sting of the scorpion is a spoonful of turpentine on a lump of sugar, and it certainly seems to modify the symptoms. He has found that the peons also ligate, when possible, above the part stung, and burnt with a live coal or cigarette the place where the sting entered. Some give alcohol, or alcohol in which a number of bodies of scorpions have been kept for a long period. Ammonia locally, or ammonia with sweet oil applied externally, is used. One rather novel remedy is to have the person stung eat his own excrement, or an infusion of excrement. The local drug stores have prepared for these cases *cucharadas* (Spanish for "spoonfuls") of chloral hydrate and ammonium bromide and it is astonishing the quantity of chloral that a child can take during these convulsions without any noticeable effect. Aconite has been recommended, and at Dr. Hodgson's suggestion he has tried tincture of cedron seed, which seems to modify the symptoms somewhat. In adults a good sized dose of chloral and bromides is ordinarily all that is needed. The symptomatic antidote par excellence is chloroform. Since our author began giving chloroform to children at once and continuing so as to modify the convulsions for three hours, he has not had a fatal result. In those cases which would inevitably end fatally without the chloroform, he has had notably favorable results. Since iodine in very small quantities modifies the venom, he usually gives a dose of the tincture well diluted in water at once. Experience has shown that every effort must be made to get up a profuse perspiration, and in children he uses hot water baths, and has had good results in adults with injections of pilocarpine.

4. **Hay Fever.**—Stein favors alcohol injections of the nasal nerves as treatment of hyperæsthetic rhinitis and nasal hydrorrhœa. The nasal branch of the fifth nerve can be reached by way of the nostril at the extreme anterosuperior angle, where it enters the nose from the cranial side, through the most anterior cribriform opening. A special needle, two and one half inches long, of twenty-two gauge and with a very stub point, is attached to any hypodermic syringe. A second needle, four inches long, of eighteen gauge and with a forty-five degree curve at its end, is used when the posterior injections are required. Alcohol is used for injection because it disorganizes the elements of the nerve without serious destructive changes; moreover, it is sterile, and hence free from the danger of causing infection. Various strengths have been used, but a 50 per cent. or 75 per cent. solution answers all the purposes of the full strength as formerly used. About ten to fifteen drops to each injection is the preferable amount. The area to be injected is first anæsthetized with a ten per cent. solution of cocaine on a tampon. At the same time the patient is given a tablet containing morphine, one twelfth grain; atropine, one six hundredth grain; caffeine, one sixth grain; and instructed to take a similar tablet every three hours for three or four doses. These are given for the purpose of minimizing the pain incidental to the introduction of the alcohol. In seeking the point of injection of the nasal nerve the cocaine solution usually depletes the membrane sufficiently to allow of easy introduction of the needle point to the roof of the meatus. But in the presence of a high deflection difficulties may be encountered. It has been his practice of late to seek with the point of his needle the opening in the bone, through which the nerve enters the nose, and, as stated, this will be found at the extreme anterosuperior angle of the attic, a millimetre or so external to the septum. When one feels the point of the needle enter the canal, the injection commences, and ten to fifteen drops of the fluid are slowly introduced. If successfully performed, the inhibition of nerve action immediately

takes place, and will continue for a varying period of time. On a return of nerve activity the injection may be repeated. If the hay fever cases are taken in hand before the attacks commence, much better results are obtained, and with less likelihood of an early return. In refractory cases it has been found necessary to inject the sphenopalatine area in addition to the anterior nasal nerves.

7. **Bone Lesions.**—Horwitz concludes from his observations of bone lesions that in acute osteomyelitis the cortex is thickened and irregular, the periosteum is raised, and new bone of lesser density is deposited underneath it. In congenital syphilis, new bone of increased density is symmetrically deposited on both sides of the shaft. In acquired syphilis, this new dense bone is irregular and "furred." Abscess in osteomyelitis is found in the medulla; in syphilis within the cortex, the medulla not being involved. In osteomyelitis, the joints are rarely involved, the same condition existing in acquired syphilis. In congenital syphilis, on the contrary, joint involvement is the rule. Syphilis shows thickening on both sides of the cortex, rickets on the concavity of a bowed limb only, and with no increase in the diameter of the shaft. In syphilitic spina ventosa a periostitis with dense bone deposit is seen; in the tuberculous form the medulla and cortex are merged into one mass of soft bone. In all forms of syphilis the original outline of the bone is retained and clearly seen within the new formation; in rickets the shaft is distorted; in osteomyelitis there is a disturbance in all the layers of the shaft; in tuberculosis a merging of the cortex and medulla. Syphilitic epiphyseal enlargement is unilateral; rachitic epiphyseal enlargement, bilateral. In rickets the epiphysis is enlarged, the end of the diaphysis is widened and cupshaped for the reception of the epiphysis, and the bone is of diminished density. In tuberculosis the epiphysis is squared and a rarified area surrounds the focus which is of indefinite outline; in osteomyelitis the focus, clearly outlined, is surrounded by a dense eburnated area.

SOUTHERN CALIFORNIA PRACTITIONER.

July, 1910.

1. Symptoms and Diagnosis of Ulcer of Stomach, Duodenum, and Gallstones. By William A. Edwards.
2. Symptoms and Diagnosis of Ulcer of Stomach, Duodenum and Gallstones, By E. C. Moore.
3. Ankylostomiasis, By Clarence L. Cole.
4. First Aid in Eye Injuries, By Frank W. Miller.
5. Medical Expert Testimony, By Elbert Wing.

PRACTITIONER.

July, 1910.

1. Malignant Endocarditis, By Sir John Broadbent.
2. Treatment of Large Postoperative Ventral and Umbilical Herniæ, By H. J. Waring.
3. Internal Abdominal Injuries, By W. H. Battle.
4. Hydrocephalus, By Leonard G. Guthrie.
5. The Diagnosis of Intracranial Tumors, By Arthur J. Hall.
6. A Case of Exostosis of the Os Calcis, By Herbert French.
7. Acute Polioencephalitis, By Reginald Miller.
8. A Note on Slight Opacities of the Lens, By A. Hugh Thompson.
9. Two Cases of Pregnancy Complicated by Intestinal Obstruction and Appendicitis respectively, By J. E. Gemmell.
10. Bennett's Fracture, By V. A. P. Costobadie.
11. One Hundred and Thirty-three Cases of Hydramnios, By Edward Burstal.
12. The Safety of Immediate Appendicestomy in Cases of Suppurative Appendicitis, By Marcus Mamourian.
13. A Case of Traumatic Cerebral Hæmorrhage, with Remarkably Late Onset of Symptoms, Operation, Recovery, By G. H. Hanna, Russell Coombe, and W. Gordon.
14. The Prescription in a Nutshell System, By F. S. Pitt-Taylor.

1. **Malignant Endocarditis.** — Broadbent remarks that the results from treatment of malignant endocarditis are extremely unsatisfactory. Various drugs have been administered with the idea that they may exercise some germicidal action, such as sodium sulphocarbonate, quinine, arsenic, mercury in the form of the perchloride, and formalin, but they have all been found inefficient. Salicylates are also useless. Antistreptococcal serum, especially the so called polyvalent variety, has been tried, but in view of the various microorganisms, not to mention the many strains of streptococci, which may be responsible for the disease, it is rather hard to select the proper serum. The vaccine treatment would seem to afford a better chance of success, but when one considers how difficult it must be for the protective substances, even if formed, to reach the microorganisms deeply seated in the affected valve through the very imperfect and slender channels through which the blood supply reaches the valve, the chances of success do not seem very promising, and the vaccine treatment will in no way lessen the dangers of embolism. Moreover, in acute generalized infections, the vaccine treatment is not so hopeful as in the case of focal lesions. One case of recovery attributed to the vaccine treatment has been recorded.

4. **Hydrocephalus.**—Guthrie states that operative treatment in hydrocephalus aims at relieving pressure symptoms due to accumulation of fluid within the cranial cavity. The methods devised for the purpose are: 1. Lumbar puncture; 2, puncture and drainage of the lateral ventricles; 3, drainage of the subarachnoid space; 4, drainage of the ventricles into the subdural space. Occasionally mercurial inunction seems to produce good results in syphilitic infants who show signs of incipient hydrocephalus. But congenital syphilis is a common cause of hydrocephalus. Iodoform inunction and potassium iodide internally have alike proved useless in his hands in cases of incipient hydrocephalus from postbasic meningitis. In early stages, leeching the occiput is not an irrational procedure, seeing the close anastomosis which often exists between the sinuses and the veins of the scalp through foramina in the occipital bones. Treatment by vaccines and sera (Flexner's, Ruppel's, and Lister's) has without doubt lowered the death rate in cerebrospinal and postbasic meningitis, and will no doubt reduce the incidence of hydrocephalus in patients who recover from these diseases.

7. **Acute Polioencephalitis.**—Miller says that apart from an associated lesion in the spinal cord there are no positive signs to make the diagnosis of polioencephalitis certain; besides some ætiological factors may be of value. For the rest the question has to be settled by the exclusion of other possibilities. Of these the most important are intracranial tumors giving rise to sudden symptoms, thromboses due to the endarteritis of inherited

syphilis or those occurring during some acute specific fever, and embolism. Of greatest importance is evidence of inherited syphilis in the child, particularly in the eye grounds and in the presence of an excess of lymphocytes in the cerebrospinal fluid. In polioencephalitis the cerebrospinal fluid shows no characteristic changes. Embolism due to heart disease is very rarely seen in children, and is especially rare in young children. Absence of any cardiac lesion does not, however, entirely put the possibility of embolism out of the question, for occasionally a particle of tuberculous material may act as an embolus, and, becoming arrested in the brain, give rise to the sudden onset of hemiplegia. Although at the time there are no symptoms of tuberculous meningitis, these are very likely to develop within the next few weeks. Such cases, which are very rare, are only to be distinguished from those of polioencephalitis by signs of tuberculosis being recognizable in some of the organs of the body, or, failing that, by the delicate and tuberculous appearance of the child as contrasted with the typically strong and healthy looking subject of encephalitis. As in poliomyelitis so in polioencephalitis, the change which occurs after the onset of the disease is toward improvement. The immunity given by one attack is usually complete, and relapses are extremely rare. The paralyses tend to improve, and the disorders of movement, such as ataxy and tremor, usually disappear altogether, although, unfortunately, this is not an invariable rule. The consequences most to be dreaded are mental degeneration and epilepsy. In mild cases, especially where the cerebellum or midbrain have been slightly affected and improvement has rapidly occurred, there is little likelihood of such sequelæ, but in the cortical cases, and in all instances in which there has been prolonged unconsciousness at the onset of the disease, both mental deterioration and epilepsy are prone to develop. Except in the bulbar and medullary cases there is little immediate danger to life. We have unfortunately no control over the disease. During the active stage sedative drugs and measures may be required, while during convalescence it is usual to give potassium iodide to promote the absorption of the inflammatory products in the nerve tissues. Later, by educative means, the child may be assisted to regain the fullest possible use of its limbs.

GLASGOW MEDICAL JOURNAL.

July, 1910.

1. The Deaf Child from the Viewpoint of the Physician and of the Teacher, By James Kerr Love.
2. Cases of Disease of the Cæcum and Sigmoid which Simulated Affections of the Uterus and Annexa, By J. M. Munro Kerr.
3. Arterial Spasm in the Brain, Associated with Transient and Permanent Paralysis, By G. A. Allan and G. Haswell Wilson.
4. Note on a Case of Congenital Enchondroma of the Right Hand, By A. J. Hutton.

1. The Deaf Child.—Love remarks that the education of deaf children without previous clinical examination and classification is wasteful and inefficient. The massing of deaf children in institutions should be avoided, except in the case of the mentally defective deaf. Poor deaf children should be fed, clad, and, where necessary, boarded out at the expense of the educational authorities. In these respects they need the same treatment as poor hearing children. The education, but not the instruction, of deaf children should begin as soon as the fact of deafness is known, and the mothers should be the first teachers. Unless the speech habit is acquired before the age of five years the best oral results can seldom be got. If the physician and the teacher are to cooperate in the work of educating the deaf child there must be not only medical inspection of all school children, but there must be a specialist attached to every school or institution for the education of the deaf. The best man for this work is the aural surgeon. And even the aural surgeon must study the deaf child long and carefully before he can understand this strange creature, without hearing, without speech; this half animal, half god, who by education may be made a man, with no evidence of that which stamps man more than anything as higher than the lower animals—the power to receive and communicate his thoughts. But as year after year he sees further into the patient, waiting spirit, and as year after year he se s this spirit set free, he will be rewarded by the highest that is given to our profession—love, not mere pity, but an intelligent and helpful love for these little ones who cannot help themselves. Thus will the physician share a privilege which has been too long the exclusive possession of the teacher of the deaf.

Proceedings of Societies.

ASSOCIATION OF AMERICAN PHYSICIANS.

Twenty-fifth Annual Meeting, held in Washington, D. C., May 3, 4, and 5, 1910.

The President, Dr. Henry Hun, of Albany, in the Chair.

(*Continued from page 241.*)

The Interpretation of the Metabolic Defects in Diabetes Mellitus upon the Basis of the Theory of Intracellular Ferment Action. — Dr. A. E. Taylor, of Berkeley, Cal., read this paper. He said that there were four chief reactions of glucose in the animal body. The formation of glucose from lævulose and galactose and the formation of galactose from glucose: the formation of glycogen from glucose and the reversed reaction; the formation of fat from glucose; and the combustion of glucose. All were reactions of fermentation. Upon the basis of the nature of the chemical reactions involved, all were presumably related to different enzymes. Retained fully in true diabetes was the reaction of intramolecular conversion, the formation of glucose from lævulose and galactose. More or less completely lost were the power of forming glycogen from glucose, that of forming fat from glucose, and that of burning glucose, especially the last. In the reaction of formation of glycogen from glucose two stages were known—the stage of disaccharide and that of polysaccharide. We did thus not know where in diabetes the difficulty lay. The loss of the power of forming fat from glucose could not be studied until we knew whether normally sugar was formed from fat in the body. In the case of the loss of the power of burning sugar, it was known that

the difficulty lay in the very first stages of the reaction, before the stage of lactic acid. The loss of power of forming glycogen and fat from glucose could not be dependent upon the loss of the power of burning glucose. The loss of power of burning glucose was physicochemically to be interpreted as follows: Glucose in alkaline reaction was slowly burned; this was the autoreaction. The muscles provided a zymase, which was of low activity only. The pancreas, presumably the islands of Langerhans, provided a zymoexcitor, whose action was to multiply greatly the acceleration accomplished by the muscular zymase. A direct analogy was to be found in alcoholic fermentation, where the zymase of the yeast was the enzyme and phosphoric acid the zymoexcitor. Loss of combustion of glucose could be caused by loss in the mass of the muscular enzyme, by loss in the mass of the pancreatic zymoexcitor, or by some disturbance in the reaction. The best investigations indicated that in diabetes of the classical type the cause was to be found in the pancreas, leading to a more or less complete reduction in the mass of the zymoexcitor.

The Distribution of Protein Digesting Enzymes in the Body, and their Part in Some Pathological Processes.—Dr. Eugene L. Opie, of New York, read this paper. He said that numerout observations had shown that a variety of conditions, often associated with degenerative processes in various organs and with cachectic conditions (*c. g.*, with carcinoma), were accompanied by increased antienzymotic (antitryptic) activity of the blood serum. Poisoning by chloroform or by phosphorus, associated with advanced degenerative changes in the liver, illustrated this increased antienzymotic activity. By the study of the enzymes present in the liver and in the blood serum after the administration of these substances, the attempt had been made to explain the change.

The Internal Secretion of the Pancreas.—Dr. Joseph H. Pratt and Dr. Lesley H. Spooner, of Boston, presented this paper. Atrophy of the pancreas, they said, was produced by ligating the ducts in dogs and cats. The limit of assimilation of carbohydrates decreased fifty per cent. or more in two months after occluding the pancreatic ducts. In one dog kept for a year under observation, diabetes did not develop. There were no definite evidences of compensation on the part of other organs for diminished pancreatic function. The limit of assimilation for glucose increased by feeding the animals with fresh pancreas. In both dogs and cats complete disappearance of the islands of Langerhans in the atrophied pancreas took place without the occurrence of diabetes.

Dr. Henry Sewell, of Denver, called attention to some observations, yet incomplete, that he was making on a child who, on a very strict diet, was not cured of glycosuria. A complete report of his work would be given at some subsequent meeting of the association.

Dr. William G. MacCallum, of Baltimore, said that similar work had been done in Baltimore.

Dr. Pratt said he had under observation a man who six years ago suffered from hæmorrhagic pancreatitis, and the greater part of his pancreas was removed by operation. Three years later he had diabetes. This was a beautiful case to study, for it was known that the diabetes was purely of pancreatic origin.

Clinical Experiences with the Cammidge Reaction.—Dr. Donald Church Balfour, Dr. James Taft Pilcher, Dr. Byrd Charles Willis, and Dr. Bernard Francis McGrath presented this communication, which was introduced by Dr. Louis Blanchard Wilson, of Rochester, Minn. It was said that work by Balfour two years ago in eighty vases, following closely Mr. Cammidge's technique, had been discouraging in results and been given up. Examinations had been resumed by Pilcher in May, 1909, principally in cases showing more or less symptoms of pancreatic involvement. An effort was made to improve the technique by running parallel tests of hydrolized and unhydrolized specimens. The cases were studied clinically by Pilcher at the time of making the tests. Of sixty-two patients at operation showing involvement of the pancreas, fifty gave more or less "positive" reactions. Of fifty cases showing at operation no pancreatic involvement, seven gave more or less "positive" reactions. Of twenty-five "well" individuals, one gave a "positive" reaction. This work served but to show the possibilities of error owing to the indefiniteness of what actually constituted a reaction due to great variation in color changes, amount of precipitate, type of crystals, and relation of controls.

Willis and McGrath therefore took up study, along with Pilcher, five months ago, seeking first to attain a uniform technique; second, to analyze the types of reaction; and, third, to eliminate the personal equation by having the final reactions classified by one (Pilcher) who knew nothing of the patient. It was found necessary to establish for accurate recording nineteen types of final reactions. As nearly as could be determined from Mr. Cammidge's somewhat indefinite description, probably four of these types would be (by him) considered positive and the remainder negative.

Cases were clinically of four classes: I. Cases shown at operation or autopsy to present involvement of the pancreas. II. Cases (with abdominal or pelvic lesions), which at operation or autopsy were shown to be without involvement of the pancreas. III. Sick individuals in whom the pancreas was not examined. IV. Apparently well individuals. Of Group I (pancreas involved), containing twenty-one cases, fourteen were examined before operation. Of these, six gave positive reactions. Of the same twenty-one cases examined five days after the operation, six were positive, three of these having been positive before operation, one negative, and two not previously examined. Eighteen of these cases were examined about the ninth day after operation, and three gave positive reactions. These three had all been positive at the examination before operation. One had been positive on the second test, and the two others negative. Of Group II (pancreas not involved), containing sixty cases, twenty-one were examined before operation. Of these, fourteen were positive. Five days after operation all sixty were again examined, and fifteen were positive. Four of these had been positive before operation and the remaining eleven had not been previously examined. About nine days after

operation fifty-five of these cases were again examined. Fourteen were positive. Of these, five had been positive before operation and the remaining nine not examined before operation. Nine of the fourteen cases had been positive five days after operation. Of Group III (sick persons whose pancreas was not examined), 207 cases were examined. Seventy-three of these were positive. Of these seventy-three positives, fifteen were goître cases (thirty-one goître cases in all examined), eight were appendicitis cases, and the remainder were cases of salpingitis, uterine tumors, etc. Of Group IV (apparently well persons), seventeen cases were examined. Of these, five were positive.

From the foregoing it was apparent: 1. That even where the most elaborate care was exercised to follow the technique of Mr. Cammidge's "C" reaction in the most uniform manner, *if knowledge of the clinical histories and other factors of the personal equation were eliminated,* the final results, judged by Mr. Cammidge's own criteria, must be considered, as a means of diagnosticating disease of the pancreas, as both valueless and misleading. 2. There was no apparent clinical relationship between disease of the pancreas and any of their various types of final reaction. 3. It did not seem that the final reactions were artifacts, but rather that they indicated actual metabolic variations. The relationship of these changes in metabolism to the welfare of the patient was not apparent.

Dr. Francis P. Kinnicutt, of New York, said that observations at the Presbyterian Hospital would not permit him to accept Dr. Wilson's conclusions. Their work had been most thoroughly and carefully done and by an expert, and the personal equation had been eliminated. The examinations were made by one person, an expert chemist, who had no knowledge of the cases. They had used the reaction in 127 cases and there were positive reactions in twenty-four of them.

Dr. Wilson said that it seemed to the authors that their results went far to prove that a positive reaction did not necessarily demonstrate a pancreatic lesion; in fact, there was a positive Cammidge reaction in many healthy individuals. There was, indeed, a larger number of individuals without pancreatic lesions that gave the reaction than of those who had pancreatic lesions.

Officers for the Ensuing Year were elected as follows: President, Dr. F. Forchheimer, of Cincinnati; vice president, Dr. J. George Adami, of Montreal; secretary, Dr. George M. Kober, of Washington; recorder, Dr. Solomon Solis Cohen, of Philadelphia; treasurer, Dr. J. P. Crozer Griffith, of Philadelphia; councillor, Dr. George Dock, of New Orleans.

Digestive or Alimentary Oversecretion of Gastric Juice.—Dr. Julius Friedenwald, of Baltimore, said in this paper that digestive or alimentary supersecretion was characterized by the appearance of abnormally large quantities of gastric secretion after the introduction of an ordinary test meal, being distinguished from continuous supersecretion by the presence of but little or no gastric juice in the fasting stomach. His observations were based on a study of fourteen cases, twelve in males and two in females, their ages varying from eighteen to sixty-four years. The symptoms consisted of fulness, pressure, distention, and eructations after meals, with pain in the region of the stomach, accompanied occasionally with attacks of nausea and vomiting. There was usually extreme constipation, but rarely heartburn. Nervous symptoms were always present. A marked feature in every case was the variability of the symptoms, periods of discomfort often alternating with unaccountable periods of well being. A symptom present in all instances was emaciation, a loss of from eighteen to thirty-two pounds being observed. In none of the cases was the stomach dilated. The gastric contents extracted after an Ewald-Boas test breakfast ranged between 190 and 410 c.c. This large amount was always a feature of the disease, and pointed to the possibility of the existence of an alimentary supersecretion. For the most part the stomach contents consisted of a very watery secretion, with but little solid sediment. The amount of fluid often ranged as high as ninety-four per cent., but once as low as sixty-eight per cent. The specific gravity ranged between 1.005 and 1.014. Of the fourteen cases, eight presented superacidity, five normal acidity, and one subacidity. The starch digestion depended largely upon the degree of acidity. Soda crackers were given as a test breakfast; at the end of an hour, in the cases of supersecretion, from 104 to 220 c.c. of contents were obtained, being very thin and watery and with but a small amount of solid residue. With the dry test meal two of the cases presented superacidity, eleven normal acidity, and one subacidity. The contents of the fasting stomach were extracted in all the cases, but in not one could more than 10 or 15 c.c. of contents be obtained. Alimentary supersecretion was a nervous affection which was apt to extend over a long period of time, with great variability of symptoms, days and weeks of apparently perfect health giving place suddenly to periods of severe distress. That the disorder was purely a form of gastric neurasthenia was manifested by the fact that at those times when the patient was restored to good health the increased secretion following a meal was apt to disappear.

Dr. Bertram W. Sippy, of Chicago, said that there were many factors which influenced the motility of the stomach. Supersecretion might depend upon an increased activity of the glands; it might depend upon changes in the osmotic condition, etc.

Dr. Friedenwald thought that the condition was really a gastric neurosis, a gastric neurasthenia. It certainly disappeared when the patients were in better physical condition.

The Bacteriology of Acute Respiratory Infections as Determined by Cultures from the Bronchial Secretion.—Dr. L. Emmett Holt, of New York, read this paper. The purpose of the work was to obtain some facts as to the increased frequency of respiratory infections, especially to ascertain what part, if any, was played by the *Bacillus influenzæ*. The results of the first season's observations, made upon 250 patients and forty nurses, indicated that the influenza organism played a very important part, especially in winter and early spring infections, being second only to the pneumococcus. During the present season about 1,000 cultures had been made from 400 patients and thirty-two nurses,

besides cultures from the lungs and heart's blood in sixty-five routine autopsies. The patients were all under three years of age. In taking the cultures, so far as possible, bronchial secretion was secured; no others were found to be reliable. Controls were taken from the pharynx, nasopharynx, and nose in about forty cases, to determine the variations. The method of taking bronchial cultures consisted in inducing a hard cough by pharyngeal irritation and catching the secretion upon a swab. With regard to the *Staphylococcus aureus*, he believed that it played a more important part in the bronchopneumonias in young children than had usually been accorded to it. The findings in bronchitis differed very little from those in cases of pneumonia as to the frequency with which the pneumococcus, streptococcus, and staphylococcus were found. The *Bacillus influenzæ*, however, was present in a higher percentage of cases than in the pneumonias. In the nonrespiratory cases, while all these organisms were frequently found, the proportion of influenza fell to the lowest point, twenty per cent, the pneumococcus to forty-five per cent., and the streptococcus and staphylococcus to fifty-two and eighty-five per cent. respectively. In general the post mortem findings corresponded with the clinical findings as determining the type of infection. Culture making involved considerable labor. Was it of any practical value to the physician? He believed, after an experience extending over two years, that it was of great assistance in diagnosis, especially in influenza infections. Therapeutically these findings might have some bearing. The use of influenza vaccines in about half a dozen cases had been used without any very decisive results, but he believed this required further investigating. The use of vaccines was indicated especially in the very protracted or recurring cases of influenza infection.

Dr. Frederick T. Lord, of Boston, spoke of the work that he had done along the same lines from 1903 to 1905, working, however, not with babies, but with adults. One hundred and eighty-six cases were studied, particularly the infections of the upper respiratory tract. Two thirds of this number were mixed, the remaining one third having but a single organism, predominating. However, when but one organism predominated at the first examination, at subsequent ones there appeared almost always a mixed infection. It was extremely difficult to classify these cases properly and to make the clinical picture correspond to the bacteriological findings. There was no leucocytosis in the infections of the upper respiratory tract; in the deeper parts of this tract, however, there was a high leucocyte count.

Dr. William S. Thayer, of Baltimore, had been especially interested in the recital of Dr. Holt's cases, and he recalled several cases of this sort occurring in a region where malaria was not uncommon and where a mistake in diagnosis was often made. He had in mind two cases that resembled malaria, one in which there were two sharp febrile paroxysms coming on exactly forty-eight hours hours apart.

Dr. William H. Park, of New York, referred to the importance attached to the cultural methods and the bearing they had both on the diagnosis and the prognosis. At the Babies' Hospital in New York they met with many cases supposed to be bronchitis or bronchopneumonia, but which were really found to be instances of tuberculosis. The majority of these cases were not diagnosticated as such. It seemed to be extremely difficult to carry out these examinations.

The Basic Principles of Vaccine Therapy.—Dr. J. D. Adami, of Montreal, read this paper. In conclusion he said that it remained to be noted that Wright—and rightly—made the guiding principle in the development of his method of vaccine therapy, namely, the establishment of an index whereby to determine the effects and course of the subsequent reaction. This was a notable advance. Nevertheless, serviceable as it had been in establishing vaccine therapy as a rational procedure and in determining both the intervals that should elapse between vaccinations and the augmentations of successive doses, it had to be admitted that Wright's index was faulty. The principle was all important, the means of application of the same imperfect. When two of the leading experts in London, working with samples of the same blood taken before and after vaccination, could report the one that the index was raised, the other that it was lowered by the process; when it was pointed out by Meakins that a given serum might afford a higher opsonic index when it was diluted than when it was undiluted; and when, as noted by more than one observer during a long continued negative phase, which according to Wright was a danger signal, the patient might obviously be making rapid improvement, something must be wrong. The only practical course to recommend was that, in connection with each particular infection that it was sought to treat, the observer should first study thoroughly the variations in the opsonic and other indices in a series of cases while carefully observing the effects of the vaccination treatment at the bedside, and then, armed with this foundation knowledge of the results of different strengths of doses in the different orders of cases, educate himself to depend more and more upon clinical symptoms in determining the strength and the frequency of his inoculations. In short, vaccine therapy, to be a success, must be undertaken, not by the busy consultant, nor, again, by the confirmed habitué of the laboratory, but must be placed in the charge of one who, combining a thorough laboratory training with a certain amount of time not consecrated to other engagements, and a recognition that his future field lay in clinical medicine, accepted gladly the opportunity here afforded to apply his technical knowledge and to make intimate studies of individual cases of disease. Vaccine therapy lay in the hands of those younger and well trained physicians whom happily the foremost schools of this country were producing in increasing numbers. Thus as a final principle it might be laid down that vaccine therapy was not to be undertaken by the ordinary practitioner; there were too many dangers attaching thereto, and its corollary that, excellent as might be the individual preparations made by sundry firms of wholesale druggists, for them to advertise these lightheartedly far and wide, and recommend them to the notice of the ordinary practi-

tioner for use from one end of the country to the other, was absolutely reprehensible, and deserved the condemnation of the association and of all who had studied conscientiously this matter of vaccine therapy.

Vaccine Therapy in Typhoid Fever. — Dr. Mark W. Richardson, of Boston, said that it was his personal opinion that the status of vaccines in typhoid fever was somewhat as follows: 1. They were of the greatest value in prophylaxis, and should be made use of by all who, as physicians, nurses, ward tenders, or laymen, were likely to be exposed to the disease. Their use by the general public could not be expected in the near future. For this result, time and education would be required. 2. Typhoid vaccines, properly used, would, he felt sure, prevent a large proportion of relapses. 3. The success of vaccines in the treatment of the original disease would depend upon the character of the case. Conservatively used, they would do no harm and they might be of much assistance. 4. Early diagnosis and early treatment would be undoubtedly of great importance.

Effects of Injections of Killed Streptococci in the Living Body.—Dr. George Henry Weaver, of Chicago, said that destruction of streptococci in the body was accomplished through phagocytosis. Opsonin was the only demonstrable antibody of importance in this process. He considered the immunizing power of killed streptococci in uninfected animals. Streptococci killed by strong galactose solutions were much more active than those killed by heat. Immunity in rabbits was associated with an increase of opsonin. The prophylactic injections in man (*a*) against scarlet fever had an uncertain usefulness; (*b*) those to prevent streptococcic complications in scarlet fever had apparently no value. In considering the therapeutic effects of killed streptococci in man, he said that the galactose killed were more active than heat killed streptococci. In erysipelas they had no effect except in the subacute and chronic cases. In streptococcic complications of the eruptive diseases they gave no effect in the acute stage, but in the subacute and chronic stages marked benefit was noted in some cases. The "septic" cases were often benefited. The difficulties in judging the results of injections were very great because of the natural course of the condition treated. Failure of favorable cases might depend upon exhaustion of reactive ability of the bodily cells, adaptation of bacteria, or distortion of the interaction of bacteria and the serum and cells of the body.

Report of the Inoculation Department of the German Hospital, Philadelphia.—Dr. John C. Da Costa, Jr., of Philadelphia, reported upon the methods and technique (clinical data, choice of cases, preparation of autovaccines, use of stock vaccines, use of "raw vaccines," and opsonin estimates), with case reports, and he concluded by discussing the utility of vaccine therapy in nonoperative surgical affections, the postoperative use of vaccines, and the treatment of bacteriæmia and sepsis, furuncles, and carbuncle.

Results of Vaccine Therapy.—In this paper Dr. William H. Park, of New York, said that bacterial vaccines were of value in many localized bacterial infections. Their value in general infections, such as typhoid fever and pneumonia, was not yet established.

Dr. Frank Billings, of Chicago, said that at the Presbyterian Hospital in Chicago they had used vaccination in various forms of infections, with satisfactory results in a certain class of cases and very unsatisfactory results in others. In the acute infectious diseases, while vaccination did not seem to do good, it certainly did no harm.

Dr. Francis P. Kinnicutt, of New York, said that during the past three weeks they had received at the Presbyterian Hospital three cases of puerperal sepsis; they had used the autogenous vaccines and all the patients had promptly recovered. He found it difficult to judge of the dose and the frequency with which it should be repeated in these cases.

Sporadic Trichiniasis. — Dr. W. Gilman Thompson, of New York, made this report. The fact that he had been able to obtain records of fifty-two sporadic cases occurring during a period of six years proved that trichiniasis was much more common as a sporadic disease than was usually supposed, at least in the vicinity of New York, where there were so many immigrants whose dietetic habits rendered them liable to infection. In New York city the meat inspectors of the Department of Health directed their examinations mainly to the detection of tuberculous meat, and no systematic microscopical examination was made of the various products of swine flesh. An analysis of fifty-two cases, he thought, might serve to emphasize the importance of this subject.

(*To be continued.*)

Book Notices.

[*We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.*]

Fifty Years of Darwinism. Modern Aspects of Evolution. Centennial Addresses in Honor of Charles Darwin, before the American Association for the Advancement of Science, Baltimore, Friday, January 1, 1909. New York: Henry Holt & Co., 1909. Pp. iii-274

The subtitle of this collection of essays indicates its origin. A greater monument to the genius of a world renowned scientist it would be difficult to conceive of. The introduction, by Professor Chamberlin, of the University of Chicago, touches the keynote of the series of expository papers. In opening sentences he says: "If the long list of contributions to the sessions of this association for these fifty years were searched for products of thought whose stimulus sprang from the life and works of Charles Darwin, it would reveal an impressive testimonial to his greatness as a power in our scientific world." And so he goes on to say that no more sincere monument to Darwin's memory could be raised than some material embodiment of his intellectual product.

This work comes near to fulfilling the hope expressed by Professor Chamberlin. After his own appreciation of Darwin there follows Fifty Years of Darwinism, by Professor Poulton, of Oxford University, in which he calls attention to the

influence of American students of palæontology on the growth and direction of evolutionary thought, quoting especially from letters to and from the great American botanist, Asa Gray. He also dwells on the friendships and services of the leaders of organic evolution in England, including Lyell, Galton, Huxley, Hooker, and others. The Theory of Natural Selection from the Standpoint of Botany is treated by Professor Coulter, of the University of Chicago, who observes, among other things, that "the indebtedness of botany to Charles Darwin extends beyond his formulation of the theory of the origin of species by natural selection." In this as in other addresses contained in the volume the theory of descent from species to species is scientifically elaborated. Other essays contained in the volume are as follows: Isolation as a Factor in Organic Evolution, by Professor David Starr Jordan, of Stanford University; The Cell in Relation to Heredity and Evolution, by Professor Wilson, of Columbia University; The Direct Influence of Environment, by Dr. MacDougal, of the Carnegie Institution of Washington; The Behavior of Unit Characters in Heredity, by Professor Castle, of Harvard University; Mutation, by Charles B. Davenport, of the Carnegie Institution of Washington; Adaptation, by Professor Eigenmann, of Indiana University; Darwin and Palæontology, by Professor Osborn, of Columbia University; and Evolution, by Professor Stanley Hall, of Clark University.

The whole forms an admirable memorial volume which sets forth in a truly scientific fashion the great debt of biologists to the evolutionary inquiries and discoveries of the master spirit in the various fields of investigation which he made his own. No better account of Darwin's influence in the biological realm would seem possible than this collection of aspects of his theory of evolution, and we do not overlook his own *Life and Letters*. It is a volume which may be studied with interest and profit by all concerned in biological matters.

Handbook of Physiology. By W. D. Halliburton, M. D., LL. D., F. R. C. P., F. R. S., Professor of Physiology, King's College, London. Ninth Edition (Being the Twenty-second Edition of Kirkes's Physiology). With Nearly Six Hundred Illustrations in the Text, Many of Which are Colored, and Three Colored Plates. Philadelphia: P. Blakiston's Son & Co., 1910. Pp. xvii-923.

As the originator of this popular textbook has not contributed to it for twenty years, it has ceased to bear the name of Kirkes. Professor Halliburton has almost entirely rewritten the sections on nerve regeneration, the pituitary body, peristalsis, and the functions of the cerebrum, cerebellum, and spinal cord, and has introduced entirely new chapters on the nervous system, temperature, lipoids, the conservation of energy, deep sensibility, and the physiology of conscious states. There are many new illustrations. We are pleased to note that the study of physiology is not held to afford any basis for such a fad as starvation. As to the Japanese who have been held up to us as examples of what can be accomplished on a vegetable diet, Professor Halliburton points out that their speedy rise is coincident with their adoption of the mixed diet of white civilization.

Hygiene and Morality. A Manual for Nurses and Others, Giving an Outline of the Medical, Social, and Legal Aspects of the Veneral Diseases. By Lavinia L. Dock, R. N., Graduate of Bellevue Hospital Training School, Secretary of the International Council of Nurses, etc. New York and London: G. Putnam's Sons, 1910. Pp. v-200. (Price, $1.25.)

This is an admirably written book for the instruction of the public, particularly women, as to the causes of syphilis, gonorrhœa, chancroids, and prostitution. If people generally were thoroughly familiar with the facts set forth, we might hope that the author's chapter on the principles of prevention would bear fruit, as far as the infectious diseases go. As to the abolition of prostitution, it is worthy of note that H. G. Wells, in his *Modern Utopia*, treats only of the improvement in health, education, and social status of a class that he evidently thinks to be an inevitable phenomenon of any civilization. Miss Dock seems to believe that woman suffrage will some day have an important influence on the question. We hardly know what to make of her statement that in New Zealand "commercialized vice" is practically extinct; is vice altogether sentimental there? The book contains very plain, common sense warnings as to the dangerous use in common of towels, drinking cups, bed linen, etc., advice to nurses who may be called upon to care for venereal cases, emphasized instructions to parents to educate their boys and girls at an early age, and a full but unexaggerated account of what gonorrhœa means to a woman. Fathers of girls are asked to obtain a guarantee of sexual health from future sons in law. We fear that this is a counsel of perfection to our darling Anglo-Saxon hypocrisy.

Nahrungsmitteltabelle zur Aufstellung und Berechnung von Diätverordnungen. Für Krankenhaus und Praxis. Von Dr. Hermann Schall und Dr. August Heisler. Zweite, bedeutend vermehrte Auflage. Würzburg: Curt Kabitzsch (A. Stuber's Verlag), 1910. Pp. 56. (Price, 2.50 M.)

Our authors have compiled, with an immense amount of labor, a very handy guidebook on nutrition, which appears in the form of well arranged tables. The thumb index adds greatly to its value as a reference book.

Die ambulante Behandlung der Unterschenkelgeschwüre. Dr. Jessner's dermatologische Vorträge für Praktiker, Heft 7. Vierte Auflage. Würzburg: Curt Kabitzsch (A. Stuber's Verlag), 1910. Pp. 52.

Dr. Jessner's dermatological lectures for the general practitioner appear in twenty leaflets. The present essay, No. 7, reappears in the fourth edition, and treats of a subject which gives a great deal of anxiety to the physician. Chronic ulcer of the leg has driven many a patient into the hands of the quacks. To prevent this and to give the physician a thorough knowledge of the ætiology and therapeutics of ulcus cruris is the aim of the author.

MEDICOLITERARY NOTES.

Black underwear is the latest thing recommended for wear during our tropical summer. We have not yet heard a report concerning Colonel Woodruff's experiment with orange colored underwear in the Philippines; he is said to have so clothed half a regiment of our soldiers. Black silk underwear was introduced some twenty years ago, but, except

with a few actors who wore it while bathing at Long Branch, it did not prove popular. There is one promising method of getting relief, and that is to lay aside the absurd high starched collar of civilization. This collar encases in an air proof wall the carotids, the jugular veins and the pneumogastric nerves, besides irritating the integument. Women all dress the neck sensibly during the dog days, but only one man, the sailor.

* * *

Too Many Medical Schools, in the July *World's Work*, by Edgar Allan Forbes, is a new presentation of the arguments of Abraham Flexner, illustrated by some surprising and disturbing concrete examples of ignorance on the part of the graduates of one or two medical schools that should be gently but firmly triturated into an impalpable condition. The Drug Clerk a Poor Doctor, by Dr. Eugene Yates Johnson, tells of a few fatal mistakes in prescribing by young gentlemen with a little learning, the diagnosis having been furnished by the patient or the parents. For example, a baby with double pneumonia was supplied with a palatable cough mixture not long prior to its demise. An Antivivisection Exhibition is an account of an absurd series of demonstrations by eager young women, themselves misled and sure to mislead others, by Dr. Woods Hutchinson. We thought the article too short and fear the lay audience will miss the point.

* * *

Our friends will greatly enjoy Brother Square Toes, in the July *Delineator*, by Rudyard Kipling, in which they will make the acquaintance of Kéraguen, surgeon to the French cruiser *Embuscade*, and of Tobias Hirte, the Philadelphia apothecary, first manufacturer and distributor of Seneca oil from an Indian recipe, besides meeting General Washington under novel circumstances and learning why he was called Big Hand. The Quality of Mercy treats of the new social service at the public hospitals.

* * *

Readers of Dr. W. B. Konkle's scholarly article on Rabelais, in our issue of July 9th, will learn with regret that the complete and excellent translation by Sir Thomas Urquhart and Le Motteux, last published by Bohn about 1859, is out of print and held at prohibitive prices by dealers in second hand books. Recent editions are severely emasculated and Bowdlerized. There is nothing in Rabelais's writings to bring a blush to the cheek of an experienced physician of middle age. We often wonder what kind of a personality it is that fears not to strike out lines from a masterpiece, and we puzzle over the standards that guide the editorial blue pencil. What a lot of wet nursing and general babying our reading public gets, to be sure! Let the censors stand forth till we do them reverence.

* * *

Golf and tennis produce characteristic strains of certain tendons and muscles that require ingenious surgical care; automobiling brings about neurotic conditions and demands careful preventive measures to forestall injury to the eyes. Baseball causes the "glass arm." Football brings with it all imaginable fractures and luxations. Aviation alone as an exercise does not interest the surgeon; its devotees are smashed up with a completeness that defies modern science. Aeronauts should be shriven before leaving the ground.

* * *

In the July *North American Review* there is a posthumous article by Cesare Lombroso developing a fanciful theory on Priests and Women's Clothing, in which there is a reference to the supposed origin of the medical profession. The author's leanings toward spiritualism are evident, and he certainly thought that singular delusion was eventually to become a part of modern science. Lombroso died before the American exposure of Palladino, in whom he believed. Eugenics in Relation to Immigration, by Robert DeC. Ward, states that we are careless in not restricting the tide of foreigners. DeFoe once called England "the jakes of Europe" in the lusty Saxon of his age, but if the present English are degenerated, as some say, the fact is not due to immigration.

* * *

The July *Review of Reviews* has Cancer as Known To-Day, by Isaac Levin, M. D., an article that should be quite intelligible to students of elementary biology; it is illustrated with photomicrographs. There is a portrait with a short sketch of the life of the late Dr. Robert Koch. The Disease Carrying House Fly, by Daniel D. Jackson, is strikingly illustrated; there is a hint that insurance companies might find it well worth while to undertake the destruction of this pest, "more dangerous than tiger and cobra."

NEW PUBLICATIONS.

Fenwick, W. Soltau.—Dyspepsia. Its Varieties and Treatment. Illustrated. Philadelphia and London: W. B. Saunders Company, 1910. Pp. 485.

Whitelegge, B. Arthur, and Newman, George.—Hygiene and Public Health. Illustrated. New York: Funk & Wagnalls Company, 1910. Pp. 650. Price, $1.75.)

Bosanquet, William Cecil, and Eyre, John W. H.—Serums, Vaccines, and Toxines in Treatment and Diagnosis. Illustrated. Second Edition. Thoroughly Revised. New York: Funk & Wagnalls Company, 1910. Pp. viii-362. (Price, $2.)

Rogers, Gorydon Eugene.—A Textbook on the Therapeutic Action of Light. Including the Rho Rays and Violet Rays, Electric Arc Light, the Light Cabinet. With Original Illustrations. Chicago: Published by the Author, 1910. Pp. xii-323. (Price, $3.50.)

Talmey, B. S.—Genesis. A Manual for the Instruction of Children in Matters Sexual. For the Use of Parents, Teachers, Physicians, and Ministers. With Nineteen Cuts, Forty-seven Drawings in the Text. New York: The Practitioners' Publishing Company, 1910. Pp. 191. (Price, $1.50.)

Monographs on Medical and Allied Subjects. Published by the Rockefeller Institute for Medical Research. No. 1. Issued June 30, 1910. New York, 1910. Pp. 130.

Transactions of the American Dermatological Association. Thirty-third Annual Meeting, held in Philadelphia, June 3, 4, and 5, 1910. Official Report of the Proceedings by Grover W. Wende, M. D., of Buffalo, Secretary. Pp. 289.

Stiles, Charles Wardell, and Hassall, Albert.—Index Catalogue of Medical and Veterinary Zoology. Parts 26 and 27. Bureau of Animal Industry, Bulletin No. 39. Washington: Government Printing Office, 1910. Pp. 1981-2168.

Brinckerhoff, Walter R., and Reinecke, A. C.—Studies upon Leprosy. VII. A Statistical Study of an Endemic Focus of Leprosy. A Palliative Treatment for Leprous Rhinitis, by James T. Wayson, M. D., and A. C. Reinecke.

Public Health Bulletin No. 33. Washington: Government Printing Office, 1910. Pp. 25.

Smith, F. C.—The Relation of Climate to the Treatment of Pulmonary Tuberculosis. Public Health Bulletin No. 35. Washington: Government Printing Office, 1910. Pp. 17.

Smith, F. C.—Tuberculosis. Its Nature and Prevention. Public Health Bulletin No. 36. Washington: Government Printing Office, 1910. Pp. 12.

Mitzmain, Maurice B.—General Observations on the Bionomics of the Rodent and Human Fleas. Public Health Bulletin No. 38. Washington: Government Printing Office, 1910. Pp. 34.

Anderson, John F., and Frost, W. H.—Studies upon Anaphylaxis. With Special Reference to the Antibodies Concerned. Hygienic Laboratory, Bulletin No. 64. Washington: Government Printing Office. 1910. Pp. 56.

Hale, Worth.—The Bleaching of Flour and the Effect of Nitrites on Certain Medicinal Substances. Hygienic Laboratory, Bulletin No. 68. Washington: Government Printing Office, 1910. Pp. 44.

University of Oregon Medical Department, Portland, Ore. Twenty-fourth Annual Announcement. Session 1910-1911. Pp. 32.

Albany Medical College. Register of Students 1909-1910. Announcement for Session of 1910-1911. Pp. 50.

California Eclectic Medical College, Los Angeles, California. Thirty-second Annual Announcement. Session of 1910-1911. Pp. 32.

Still College of Osteopathy. Thirteenth Annual Catalogue and Announcement. 1910-1911. Second Annual Announcement of the Still College Osteopathic Hospital and Nurses' Training School. Pp. 78.

Laurent, Edv.—Das Virulenzproblem der pathogenen Bakterien. Epidemiologische und klinische Studien von der Diphtherie ausgehend. Mit 7 Kurven im Text und 7 Tafeln. Jena: Gustav Fischer, 1910. Pp. iv-866.

Strauss, H.—Praktische Winke für die chlorarme Ernährung. Berlin: S. Karger, 1910. Pp. 47.

Sommer, Robert.—Klinik für psychische und nervöse Krankheiten. V. Band. 2. Heft. Halle a.S.: Carl Marhold, 1910. Pp. 196.

The Practitioner's Case Book. For Recording and Preserving Clinical Histories. Prepared and Arranged by the Editorial Staff of the *Interstate Medical Journal*. St. Louis: Interstate Medical Journal Company, 1910. Pp. 239.

Transactions of the College of Physicians of Philadelphia. Third Series. Volume XXXI. Philadelphia: Printed for the College, 1909. Pp. 663.

The University and Bellevue Hospital Medical College. Announcements for the Year 1910-1911. Pp. 72.

Quarterly Report of the Board of Health of the Department of Health of the City of New York for the Quarter ending December 31, 1909. Pp. 137.

Miscellany.

Leprosy in Hawaii Territory. — The *Public Health Bulletin* No. 33 contains Studies upon Leprosy by W. R. Brinkerhoff and A. C. Reinecke. The authors say that leprosy in Hawaii is quite evenly distributed throughout the Territory. The morbidity of the disease varies somewhat on different islands, and is most prevalent among the Hawaiian and part Hawaiian portion of the population, but is everywhere so high that the results of comparison are of trivial importance in the face of such a great menace to public health as an average of well over twenty per 10,000 of the native population. It is not confined to the remote districts, the capital of the Territory being one of the principal sources of cases. The prevalence of leprosy in certain districts on the island of Hawaii is notable; it is most prevalent in the adolescent and early adult age periods, and therefore bears a distinct relation to the public education, as the bulk of the lepers are either of school age or have received their infection during that period. The predominance of males and young adults among lepers in the Territory introduces the disease as an element in the local economic problem. Segregation withdraws many wage earners from the community in their early prime. The close relationship which exists between the occurrence of leprosy and the school age period indicates that a campaign for the control of the disease cannot be successful which does not contemplate careful supervision of the conditions under which this class of the population congregate, i. e., the school room. It seems evident that an elaborate public school system without thoroughgoing medical inspection may result in the development of an institution for the propagation of leprosy as well as the dissemination of knowledge. The steady improvement in the hygienic conditions in the Leper Settlement, as shown by the decrease in the death rate, testifies strongly to the practical humanitarianism of the Territory of Hawaii in dealing with the sufferers from the disease. There has been a notable increase in the number of cases of leprosy among the white inhabitants of the Territory of Hawaii in the last seven years, particularly on the island of Oahu.

Official News.

Public Health and Marine Hospital Service:

Official list of changes of stations and duties of commissioned and other officers of the United States Public Health and Marine Hospital Service for the seven days ending July 27, 1910:

CARLTON, CHARLES G., Pharmacist. Granted thirty days' leave of absence from August 1, 1910.

EAGER, J. M., Surgeon. Granted seven days' leave of absence from July 21, 1910.

GLOVER, M. W., Passed Assistant Surgeon. Granted ten days' leave of absence from July 25, 1910..

GRAY, E. GEORGE, Acting Assistant Surgeon. Granted seven days' leave of absence from July 25, 1910.

HOLT, JOHN M., Passed Assistant Surgeon. Granted seventeen days' leave of absence from August 11, 1910, and nineteen days' leave of absence from September 1, 1910.

KNIGHT, C. P., Assistant Surgeon. Granted seven days' leave of absence from July 18, 1910, under paragraph 191, Service Regulations.

LLOYD, B. J., Passed Assistant Surgeon. Granted one month's leave of absence from July 20, 1910, on account of sickness.

NYDEGGER, J. A., Surgeon. Leave of absence for seven days from July 3, 1910, amended to read on account of sickness, in accordance with paragraph 202, Service Regulations.

ONUF, B., Acting Assistant Surgeon. Granted four days' extension of leave of absence from July 17, 1910, on account of sickness.

PETTYJOHN, JOSEPH, Passed Assistant Surgeon. Granted one month's leave of absence from August 15, 1910, on account of sickness.

ROBERTS, NORMAN, Passed Assistant Surgeon. Granted one day's leave of absence, July 21, 1910, under paragraph 191, Service Regulations.

ROGERS, EDWARD, Pharmacist. Granted seven days' leave of absence from July 14, 1910, under paragraph 210, Service Regulations.

RYDER, L. W., Pharmacist. Granted two days' leave of absence from July 20, 1910, under paragraph 210, Service Regulations.

SAFFORD, M. VICTOR, Acting Assistant Surgeon. Granted ten days' leave of absence from July 20, 1910.

SEAVEY, L. T., Acting Assistant Surgeon. Granted twenty-one days' leave of absence from August 8, 1910.

WALKER, THOMAS D., Jr., Acting Assistant Surgeon. Leave of absence for eleven days from June 28, 1910, amended to read eight days from June 28, 1910.

Wasdin, Eugene, Surgeon. Granted one month's leave of absence from July 22, 1910, on account of sickness.

Wickes, H. W., Passed Assistant Surgeon. Directed to proceed to Washington, D. C., and report to chairman of board of medical examiners to determine his fitness for promotion to the grade of surgeon.

Board Convened.

Board of medical officers convened to meet at the Bureau July 30, 1910, for the examination of Passed Assistant Surgeon H. W. Wickes, to determine his fitness for promotion to the grade of surgeon. Detail for the board. Assistant Surgeon General J. D. Long, chairman; Surgeon W. P. McIntosh; Surgeon G. B. Young, recorder.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending July 30, 1910:

Allen, John H., Major, Medical Corps. Left camp at Gettysburg, Pa., with troops en route to station at Fort Myer, Va.

Barney, Charles N., Major, Medical Corps. Ordered to Fort Monroe, Va., for temporary duty.

Bispham, William N., Captain, Medical Corps. Granted twenty days' leave of absence.

Boyer, Perry L., Captain, Medical Corps. Sick leave of absence extended fifteen days.

Cowles, Calvin D., Jr., Lieutenant, Medical Corps. Upon his relief from duty as surgeon to the transport *Logan*, will proceed from duty to West Point, N. Y., for duty.

Culler, Robert M., Captain, Medical Corps. Granted thirty days' leave of absence.

Ferenbaugh, Thomas L., Lieutenant, Medical Corps. Will be relieved from duty at Camp of Instruction, Fort D. A. Russell, Manœuvre Reservation, August 10th, and will return to Fort Des Moines, Iowa.

Gandy, Charles M., Lieutenant Colonel, Medical Corps. Granted leave of absence for three months, effective on being relieved from duty at West Point, N. Y.

Gapen, Nelson, Captain, Medical Corps. Now on leave of absence, will proceed to Pine Camp, N. Y., for duty, and upon completion of this duty will return to leave status.

Grissinger, Jay W., Captain, Medical Corps. Upon arrival at Seattle, Wash., will proceed to Fort Des Moines, Iowa, for duty.

Hartsock, F. M., Major, Medical Corps. Ordered to duty with troops from station to Camp Perry, Ohio.

Hoff, John Van R., Colonel, Medical Corps. Will proceed, at the proper time, to the Camp of Instruction, Pine Camp, Jefferson County, N. Y.

Lyster, William J. L., Major, Medical Corps. Granted leave of absence for four months, to take effect about October 1, 1910.

Newlove, George, Lieutenant, Medical Reserve Corps. Ordered to duty with troops from station to Camp Perry, Ohio.

Norris, H. C. R., Lieutenant, Medical Reserve Corps. Orders directing to proceed to the Philippine Islands, for duty, revoked.

Owen, L. J., Captain, Medical Corps. Detailed for duty as inspector instructor of the Hospital Corps, Organized Militia of Michigan, to be held at Ludington, Mich., August 9 to 18, 1910.

Peed, George P., Captain, Medical Corps. Upon completion of duty at Camp of Instruction, Gettysburg, Pa., directed to proceed to Fort Bayard, N. M., for temporary duty at the General Hospital.

Pulver, Arthur L., Lieutenant, Medical Reserve Corps Ordered to proceed from temporary duty at Fort Wood to Fort Jay, N. Y., for temporary duty.

Reynolds, F. P., Major, Medical Corps. Left Fort Monroe, Va., en route to Pine Camp, N. Y., for duty.

Scott, George H., Captain, Medical Corps. Granted leave of absence for two months, with permission to go beyond the sea.

Stallman, George P., Lieutenant, Medical Reserve Corps. Ordered to proceed from Fort Douglas, Utah, to Fort Wingate, N. M., for temporary duty.

Suggs, Frank, Lieutenant, Medical Reserve Corps. Relieved from duty at Fort Hamilton, N. Y., and ordered to Fort Egbert, Alaska, for duty.

Vose, William E., Major, Medical Corps. Ordered to proceed to Fort Riley, Kansas, about August 15th, for duty at Camp of Instruction until September 15, 1910.

Whitney, Walter, Lieutenant, Medical Reserve Corps. Orders directing to proceed to Fort Egbert, Alaska, for duty, revoked.

Willcox, Charles, Major, Medical Corps. Left Fort Totten, N. Y., en route to Pine Camp, N. Y., for duty.

The following named officers of the Medical Corps are detailed for duty at the Camp of Instruction, Pine Camp, Jefferson County, N. Y., and will proceed to the camp so as to arrive not later than July 28, 1910:

Casper, Joseph, Lieutenant.
Davis, William C., Major.
Patterson, R. U., Major.
Reno, William W., Major.
Reynolds, F. F., Major.
Willcox, Charles, Major.
Wilson, James S., Major.

The following named medical officers will proceed from their respective stations to the Camp of Instruction, Fort Riley, Kansas, reporting not later than August 13, 1910, for duty:

Burket, John A., Lieutenant, Medical Reserve Corps.
Ford, Joseph H., Major, Medical Corps.
Fuller, Leigh A., Major, Medical Corps.
Jenkins, Frederic E., Lieutenant, Medical Reserve Corps.
McMillan, C. W., Lieutenant, Medical Reserve Corps.
Murtagh, John A., Major, Medical Reserve Corps.
Van Dusen, James W., Major, Medical Corps.

Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending July 30, 1910:

Downey, J. O., Assistant Surgeon. Detached from the Naval Hospital, Norfolk, Va., and ordered to duty at the Naval Hospital, Philadelphia, Pa.

Rhoades, G. C., Assistant Surgeon. Ordered to duty at the Naval Hospital, Norfolk, Va.

Births, Marriages, and Deaths.

Born.

De Vries.—In Chicago, on Saturday, July 2d, to Dr. J. Carlisle De Vries, and Mrs. De Vries, a son.

Love.—In Washington, D. C., on Friday, July 22d, to Captain Albert G. Love, Medical Corps of the United States Army, and Mrs. Love, a daughter.

Married.

Bloedorn—Howard.—In Washington, D. C., on Monday, July 25th, Assistant Surgeon Walter A. Bloedorn, United States Navy, and Miss May Howard.

Died.

Cantrell.—In Denver, Colorado, on Thursday, July 21st, Dr. G. M. D. Cantrell, of Little Rock, Arkansas.

Drake.—In Johnstown, New York, on Wednesday, July 20th, Dr. Daison D. Drake, aged seventy-three years.

Fretz.—In Fleetwood, Pennsylvania, on Thursday, July 28th, Dr. Abraham N. Fretz, aged seventy years.

Graves.—In Bridgeport, Connecticut, on Tuesday, July 26th, Dr. Frederick C. Graves, aged forty-five years.

Griffitt.—In Morgantown, Indiana, on Friday, July 22d, Dr. Reuben C. Griffitt, aged sixty-five years.

Hawke.—In Washington, D. C., on Monday, July 25th, Medical Director James Albert Hawke, United States Navy, retired, aged sixty-nine years.

Lilienthal.—In New York, on Thursday, July 28th, Dr. Frederick W. Lilienthal, aged seventy-seven years.

McAdams.—In Pittsburgh, on Saturday, July 23d, Dr. William J. McAdams, aged forty years.

Poole.—In Ellisville, Mississippi, on Thursday, July 21st, Dr. D. R. Poole, aged ninety years.

Royer.—In Trappe, Pennsylvania, on Monday, July 25th, Dr. J. Warren Royer, aged ninety years.

Smith.—In Lykens, Pennsylvania, on Wednesday, July 20th, Dr. Wellington J. Smith, aged seventy-three years.

Stone.—In Brooklyn, on Wednesday, July 27th, Dr. Richard H. Stone, aged seventy-three years.

Swarens.—In Kansas City, Missouri, on Friday, July 22d, Mrs. Mary C. Swarens, wife of Dr. J. F. Swarens, aged forty-seven years.

New York Medical Journal

INCORPORATING THE

Philadelphia Medical Journal and The Medical News

A Weekly Review of Medicine, Established 1843.

VOL. XCII, No. 7. NEW YORK, AUGUST 13, 1910. WHOLE No. 1654.

Original Communications.

RESECTION OF THE ELBOW IN CHILDREN.

BY CHARLES GREENE CUMSTON, M. D.,
Boston, Mass.

Before entering into the subject of this paper it is, perhaps, well to rapidly pass in review the pathology of the question. Out of fifty-two resections of the elbow performed by Koenig, ten were for tuberculosis of the synovial membrane and forty-two for tuberculous lesions of the bones. The latter class of cases presents several typical characters in the various bones forming the elbow joint. The radius is not a point of predilection of the disease, while the ulna, on the contrary, is frequently the seat of tuberculosis, particularly the olecranon and the juxtaarticular portion of the bone. These parts are the seat of tuberculous fungous masses or infarcts.

An important point is that the foci in the bone substance burrow outward through the skin, or at least the extension of the disease into the joint cavity usually occurs only after an external fistula has formed. Abscess and fistulæ arising in the olecranon and upper portion of the ulna will be found on the posterior aspect of the forearm, usually on the inner side of the ulna. When the process is seated in the ulna it frequently invades the diaphysis in its upper third and sometimes lower down, in which case a sequestrum or a progressive infiltrating tuberculous process will be met with. The humerus is frequently the primary seat of tuberculosis and in some few cases this bone and the ulna are both involved. In rare cases the process develops in the epicondyles without perforating the synovial sac, but usually foci will arise in the joint, either under the cartilage or in the trochlea or condyle of the humerus.

Occasionally, sinuses filled with fungous material, or tuberculous infiltrations extending far beyond the joint into the diaphysis or even into the bone marrow will be found. It is only at the commencement of an arthritis that one will be able to recognize the real origin of the lesions. In osteoarthritis the lesions will be found scattered both in the synovial membrane and bone, or, at least, they will be found under the cartilage and limiting periosteum, so that it is a difficult matter to decide which was the initial lesion. Not infrequently the foci develop at the same time in spite of their different appearance and situation, because lesions of the same age can take on a more or less rapid evolution. I am inclined to believe that tuberculous lesions of the ulna are much more frequent and more advanced when found than foci in other bones composing the elbow joint. Fungous masses and erosions are especially frequent on the sides of the greater sigmoid cavity or near the upper radioulnar joint and for this reason they are not seated in the epiphyses.

The humerus, after the ulna, appears to be most frequently affected by primary foci of tuberculosis. The radius is rarely the seat of primary foci although this may seem rather paradoxical because the pain complained of is usually located in the head of this bone.

Bone lesions are more frequently encountered than those of the periphery of the joint and the synovial membrane will be rarely involved. A lesion which frequently occurs is that of the olecranon, which is often deeply seated and of long standing. In looking over the records of cases of tuberculosis of the elbow joint in children it is remarkable how often the humeroradial joint will be found free, while the humeroulnar joint is often the seat of the disease. From this it follows that not infrequently the movements of supination and pronation will be found intact.

Generally speaking, it may be said that lesions of the ulna always predominate in cases of tuberculosis of the bones of the elbow when more than one is involved. A characteristic sign of these lesions is a *parchment* feel when one palpates the olecranon. This is a sort of very slight crepitation and may be detected by the examining finger when slight pressure is made over the bone, and from personal experience it has served better in localizing the disease in children than any other sign. Probably this sign is not encountered in the adult because in order to produce it the walls must be somewhat elastic, and the elasticity is more particularly due to the presence of cartilage. When the lesions are so far advanced in an adult, everything is destroyed, while in children the cartilage persists and enters largely into the formation of the olecranon at this age, even without taking into consideration the considerable thickness of the periosteum in the young. A fact that should not be forgotten is the relatively great resistance that cartilage in general offers against the invasion of the tubercle bacillus in young subjects. The cartilage is so resistant that it may be absolutely intact while the bone underlying it may be the seat of an extensive tuberculous lesion.

When considering the question of arthrectomy it is necessary to ascertain, if possible, the existing

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integrity of the bone ends. I do not think that this is clinically impossible but that it is difficult and uncertain, even during the operation, there is no doubt. Oftentimes it would at first appear that a simple abrasion of the soft structures would be sufficient, because the joint surfaces appear uninvolved, but the curette will demonstrate the presence of caseous foci.

Not infrequently, particularly in children, tuberculous foci are present in an epiphysis in the neighborhood of the joint, although the latter is still healthy and, for this reason, if the bone is not scraped there is considerable risk of leaving a focus of disease behind.

The frequency of synovitis in children is greater than in adults and when present is more serious than tuberculosis of the joint.

Tuberculosis of the elbow is not a diffuse process at the beginning, at least in the majority of cases, and in its early stages is localized in one or two bones, an important point from the surgical standpoint, for it is important when possible to perform resections on the elbow joint. These are far more logical than mere abrasions of the articular ends and exposes the patient far less to ankylosis. In point of fact, partial resection will invariably give better functional results, the treatment does not last so long because when it can be done the arthritis is less advanced and therefore not so extensive. In order to perform partial resection the operation must be resorted to early in the progress of the affection, because when the latter is too far advanced the results will be more than disappointing. Early resection has been condemned where large joints are concerned but from personal experience I think it should be undertaken when the elbow joint is involved, on the condition that it is resorted to early in the process.

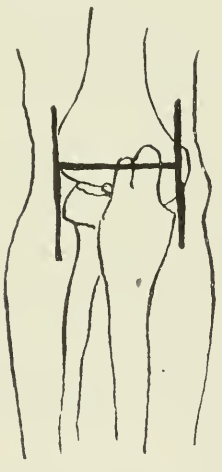

Fig. 1. — Moreau's H shaped incision.

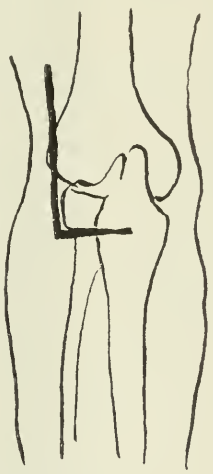

Fig. 2.— Nélaton's incision.

Before considering the various methods of resection of the elbow it should be recalled that the ulnar nerve lies in a fibrous sheath between the epitrochlea and olecranon and that the humeral artery is separated from the nerve by the anterior brachial muscle. The radial nerve will be found at the external aspect of the joint. This much having been said, the various techniques that have been employed will now be briefly discussed.

Moreau's operation. Moreau and Champion, being desirous of exposing the bones as completely as possible, made no attempt at preserving the soft structures and employed an H shaped incision. A vertical incision is carried along the inside, and another on the outside of the elbow joint, while the horizontal incision connecting these two passes just above the olecranon. All three incisions are made at once down to the bone, but the unfortunate part of the operation is that the ulnar nerve must of necessity be sacrificed. (See Fig. 1.)

Park's operation. In this operation a posterior longitudinal incision is made with the view to preserving the soft structures in order to give support to the ends of the bones. Later on Park made a crucial incision, just as was done in case of the knee. The olecranon is sawed through separately.

Dupuytren's operation. In this operation the ulna is first exposed and then, as in Park's technique, the olecranon is excised and the sheath of the nerve is carefully incised. The latter is then retracted inwardly and held out from the joint until section of the bones is accomplished.

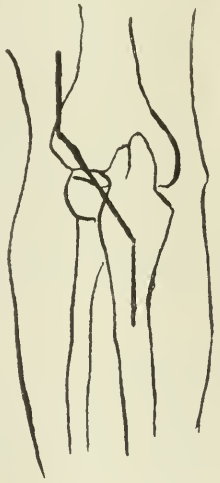

Fig. 3.—Ollier's incision.

Fig. 4.—Author's incision for resection of the head of the radius.

Nélaton's operation. An external longitudinal incision is first made, its lower end reaching the head of the radius. A second incision, beginning at the base of the olecranon is next carried perpendicularly to the lower end of the first incision, and the triangular flap thus formed is dissected back and held out of the way. (See Fig. 2.) The humeroradial joint is freely opened and the head of the radius drawn out and cut through at its neck with a chain saw, or better still with a Colin's saw, an instrument of inestimable value to the operating surgeon. Then forcibly inclining the forearm inwardly, the olecranon projects and the fibrous tissue in which it is imbedded is peeled off. The upper end of the ulna, when once well disengaged, is sawed off at the level of the radius. The humerus is next made to project and the tissues surrounding it are separated from the lower end, care being taken to avoid the ulnar nerve, and as much of the bone as is necessary is resected.

Farabœuf's operation. The arm is held straight out and the apex of the olecranon and crest of the ulna are made out, after which a straight longitudinal incision is made, commencing over the tendon of the triceps, five centimetres from the apex of the olecranon and ending at the crest of the ulna. The flap farthest away from the operator is then dissected off the olecranon, and when sufficiently mobilized it is turned back over the corresponding tuberosity of the humerus. When the bones are exposed on this side the other flap is dissected in order to expose the internal border of the coronoid, and outwardly, the head and neck of the radius, after cutting through the annular ligament. The bones of the forearm and then the humerus are sawed off.

Ollier's operation. This operation is employed for resection of movable joints, whose bones have retained their normal relations to each other and particularly for fungous osteoarthritis. A bayonet-shaped incision is made. (Fig. 3.) The first step is the skin incision and opening of the joint capsule. Incision over the interspace separating the long supinator and the external aspect of the triceps six centimetres above the interarticular line. This is continued downward to the projection formed by the epicondyle and from this point it is carried obliquely downward and inwardly to the base of the olecranon. From here the incision is carried along the posterior border of the ulna to the extent of from four to five centimetres. The bone is exposed and the joint capsule is freely opened in the same direction as the cutaneous incision. The second step consists in freeing the olecranon and drawing the triceps inwardly. The lateral external ligament is detached, the humerus is dislocated and the denudation of the bone is completed. Resection of the bones is then done.

The great progress made in resection of the elbow is due to the fact that the periosteum is preserved so that the result is a solid and movable joint. By preserving the periosteum the ends of the bones can regenerate and a true joint is formed between the ends of the resected bones. Ollier performed an autopsy on a young girl who died from pericarditis two months after resection and found that a neoarthrosis had formed; the humerus presented a triangular extremity which was broad and flat and on each side were two tuberosities which articulated with the radius and ulna. The olecranon projected to the extent of about three centimetres and fitted over the end of the humerus behind. At the time of the necropsy, cicatrization was not quite completed on account of the presence of a small drain in the wound, but there was no suppuration or postoperative complication.

There is nothing so variable as the time necessary for the formation of a new joint. Complications arising in the wound, the patient's diathesis, the poor condition of the tissues, all have their share in the result obtained, but none are so important as idiosyncrasy. We meet with patients who will not manufacture bone, although we cannot find any reason for this, but fortunately such patients are few. In children from ten to fifteen years of age periosteal hyperplasy begins immediately if the wound remains aseptic. After the tenth or twelfth day a hard growth with a cartilaginous feel may be detected at the resected end of the humerus with lateral projections which correspond to the epitrochlea and epicondyle. Soon after this the newly formed olecranon will be found hardened and shortly after a cartilaginous tract extending inwardly from the end of the ulna may be felt.

A rapid regeneration is by far the best. In healthy animals it takes place quickly, likewise in man after recent traumatic lesions. Some are of the opinion that bone regeneration does not take place from the periosteum and that subperiosteal resections cannot reproduce bony surfaces in their original shape. In a resection, that part of the joint which in the normal condition is covered by cartilage is removed and as there is no periosteum at this point it is difficult to understand how new bone can be manufactured by a tissue which does not exist. Be this as it may the results obtained are good.

The histological make up of the ends of the bones entering into the formation of the elbow joint at different ages in childhood is a very important matter as regards resection. The humerus has four principal points of ossification. The first one appears at the end of the second year in the condyle; that in the trochlea is present at about the age of twelve years, while in the epitrochlea it is present between the ages of four and five years and in the epicondyle it appears at about the age of thirteen years. Up to the age of seventeen years or thereabouts, these nuclei remain distinct from the body of the bone, thus causing the diaphysis to sink down into the joint. The upper end of the ulna presents this peculiarity, namely, that the diaphysis forms about three quarters of the great sigmoid cavity. At about the age of thirteen years the first point of ossification appears in the olecranon, the second about one year later, while the union of the body of the bone takes place at about the age of sixteen years. The upper epiphysis of the radius appears at the age of six years and thus the diaphysis penetrates into the joint while the uniting cartilage is intrasynovial.

Holmes is of the opinion that resection of the elbow is more successful in children than in adults, especially when extensive disease is present; it is not dangerous and should be employed as a palliative measure when the pain is severe enough to cause the child much suffering. Ashurst believes that resection performed for tuberculosis has a smaller mortality in young subjects than after the age of thirty years, and Owen advocates this operation even in cases where amputation might seem indicated. As far back as 1865, Chassaignac said that resection of the elbow in children was an excellent operation, and from the anatomical studies of Syme, Textor, and Heyfelder it would appear that the bone extremities are in a condition of slight tumefaction shortly after the operation, so that, in some cases they may take on their normal shape. The more modern writings from the pens of Sayre, Giraldès, and Saint-Germain do not mention the operation. I think that it may be safely said that resection performed on children from one to fifteen years of age presents very little danger and very often excellent results accrue, but the essential

point, in order to obtain these results, is to be fully cognizant of the manner in which to properly conduct a resection in the young. Now, in the first place total typical resections are to be rejected, and during the first two years of life conservative operations, such as abrasion or arthrotomy are to be preferred, because in the very young the vitality of the structures is such that mobility may be reëstablished, and also because the articular ends are chiefly composed of cartilage a cure may be obtained by abrasion and curettement of the diseased points in the bone. Total resection should never be performed because the functional results will invariably be bad.

In sickly children any extensive resection is a serious matter and the proper after treatment is an absolute impossibility to carry out as they cannot perform active movements, and what is still more important is that regeneration may be prevented by the poor general condition of the subject, so that the ultimate result will be a loose elbow joint.

After the age of four years children are more resistant, the plastic activity of the periosteum is highly developed, so that a postoperative cure is possible. After the age of six or seven years resection becomes more and more favorable, to such an extent that a total typical operation may be resorted to if necessary.

The technique is the same as in the adult, excepting that in the child we are dealing with cartilage and not with bone and the subperiosteal method should always be employed. The skin is incised, the joint ends of the bones of the forearm, especially the ulna, are exposed, because the olecranon is usually the seat of the trouble. When the olecranon has been freely exposed on both sides and its upper extremity, the cartilage is cut away with scissors leaving it adherent to the tendon of the triceps before attacking the periosteum. After the olecranon has been carefully examined the diseased structures are removed but the sigmoid cavity should be left intact unless it is the seat of lesions, but under no circumstances should the insertion of the anterior brachial muscle be involved.

In the majority of cases the radius will not have to be dealt with. The humerus should be exposed in the same way as the ulna, but the epicondyle and epitrochlea must be detached with scissors and the apophyses, which are cartilaginous, should be left adherent to their muscular insertions. As little as possible of the humerus should be removed and if the lesions extend high up and are limited in extent it is better to scrape out the focus and drain.

After resection of the bony structures the joint is cleaned out and the fungus masses removed with scissors, and this should be followed by a thorough curettement of the surfaces. The sharp spoon must be used with delicacy and not too extensively, its great disadvantage being that it lacerates the periosteum. The diseased structures are then swabbed with a five per cent. solution of zinc chloride.

Two layers of sutures are used if the wound is to be immediately closed. A deep layer of kangaroo unites the muscular and periosteal tissues and much importance should be given to this part of the operation in order to maintain absolute asepsis. The superficial sutures should be of either silkworm or horse hair. The upper part of the incision and a portion of the incision going over the ulna are to be united, thus leaving a space for the exit of the drainage tubes. The wound is then dressed with gauze and when the outer dresings are applied the arm should be placed in a plaster cast at an angle of about 130° to 135°. Placing the arm at a right or an acute angle is bad practice for the reason that it produces folds in the interior of the joint cavity which may obstruct the drainage. The hand should be placed in semipronation.

One should always determine the degree of approximation of the surfaces of section, and it may be given as a rule that the nearer they are brought together the less can one count on regeneration of the bone. In the young, it is useless to closely approximate them because regeneration is generally sure to occur. When the arm has been placed in the position above recommended, the dressings may be removed in about ten days.

It is most important to decide how long the plaster cast should be left on. In young subjects the formation of a new elbow is very rapid and sometimes at the end of sixteen or eighteen days it will be sufficiently solid to allow the limb to be raised horizontally. But everything depends on the extent of the resection, as well as the age of the child, because in older subjects there may be considerable laxity at the end of two or three months. If subperiosteal resection is performed the joint is fairly solid at the end of three or four weeks because all the ligaments and insertions have been left intact.

When the joint is sufficiently solid the cast is removed and the arm put up in a sling, but care must be taken that the forearm lies exactly in the axis of the arm. The greater the atrophy before operation, the more carefully should one watch the bone ends, because in order to have a successful result it is of the utmost importance that the muscles should take on an activity equal to that of the bone regeneration and the passive resistance of the neoarthrosis. As soon as the muscles are strong enough to direct the normal movements of the forearm and to fix the radius and ulna against the humerus during movement, it is time to commence passive motion.

The good results should be attributed to proper passive motions given to the new joint at the right time, and it should never be forgotten that they are the principal factors in the after treatment. However, considerable prudence must be used and they should only be resorted to when the joint shows a tendency to stiffen. It is not a case of breaking up adhesions because the aim to be attained is to produce a serous lining.

If extensive movements cannot be obtained efforts should not be relinquished, because continuing the passive movements will in the end result in the formation of an interosseous serous bursa which, in itself, will prevent the occurrence of ankylosis. Later on, the passive motions should be combined with active and in order to increase the movements of extension the limb is left out of the sling for two hours daily, during which time the patient should make movements of extension and flexion.

At the same time the muscular atrophy and paresis must be dealt with by proper means, such as massage, stimulating douches and the continued or alternating current. The finger joints and that of the shoulder, likewise those of the hand, must be kept exercising, otherwise they will become stiff and may give rise to much pain.

Having considered total typical resection of the elbow, attention should now be directed to the question of atypical resections. They may be divided into humeral, semiarticular, and radioulnar resection. For the first two incisions are made, corresponding to the upper and oblique incisions made in the typical operation. By this means the external tuberosity of the humerus is exposed by careful detachment of the insertion of the external lateral ligament. Afterward, an incision about three centimetres in length is made over the epitrochlea by which the insertions of the internal lateral ligament on the humerus and the muscles of the epitrochlea are detached. The humerus is then dislocated and resected.

For radioulnar resection the oblique and lower incisions of the typical operation are made. The oblique incision commences at the epicondyle and is carried to the base of the olecranon and then continues downward along the posterior border of the humerus. The radiohumeral joint is incised in the direction of the cutaneous incision. The tendom of the triceps is detached and the olecranon exposed inwardly as far as possible. In partial resection of the humerus a combined external and posterior incision should be employed when the condyle is to be removed; when the internal tuberosity is to be resected an internal longitudinal incision over the direction of the cutaneous incision. The tendon of the ulna alone a median incision is perhaps the best, cutting directly down to the bone through the tendon of the triceps, which is held apart on each side so as to expose the olecranon and that portion of the ulna to be resected.

Resection of the head of the radius is preferably done through a ⊢ shape incision, the horizontal branch corresponding to the interarticular line while the posterior vertical branch follows the axis of the bone but should not extend more than four centimetres downward in order to avoid the muscular branch of the radial nerve. (See Fig. 4.)

Partial resection of the elbow should be resorted to whenever possible and the results obtained in children are usually good, probably much better than those obtained from total resection. If fistulæ are present it is well to inject them with an iodoform emulsion for a few days before the operation. Esmarch's band should never be used. The soft form of tuberculosis demands an extensive arthrectomy and a large incision is required for the diffuse type. The localized form is alone subject to resection. That resection of the elbow joint is indicated in all cases of tuberculosis is far from being the rule because many of them will recover by orthopedic treatment, but certainly in those cases where amputation may be considered necessary one should always endeavor to overcome the lesions by either typical or atypical resection. The results obtained will depend largely upon the judgment and the operative skill of the surgeon.

871 Beacon Street.

VISUAL FIELDS IN ACCESSORY SINUS DISEASE.

With Report of Five Cases.

By A. Morgan MacWhinnie, M. D.,
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Infection of the sphenoidal and posterior ethmoidal cells is an oft neglected factor in the diagnosis of optic neuritis. We are prone to look upon syphilis and brain tumors as the most frequent causes of this affection. That many patients do not receive a more thorough investigation of the accessory sinuses, which would reveal the true ætiology, is due to the lack of specific information in our ophthalmic textbooks. Again, while rhinologists are on the lookout for cases with the classical symptoms, so called, yet such are found in but a very few patients, and unless the pus is evident, these sinuses are rarely explored in cases of optic neuritis.

When it is considered that the sphenoidal sinus varies in size, is often connected with the posterior

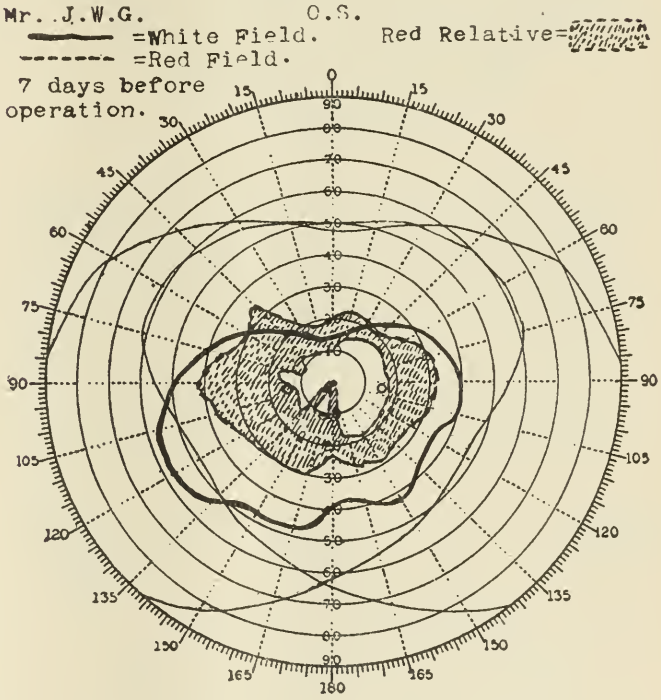

Fig. 1.—Case I, before operation.

ethmoidal, that the posterior walls differ in thickness, the frequency and ease with which the natural opening may be closed from irritating causes, it is not to be wondered that in these cells we find one of the ætiological factors of optic neuritis.

The natural opening of the sphenoid is so variable in size, from one half to four millimetres, and situated as to act, in the majority of cases, as simply an overflow outlet, rarely being found at the bottom of the sinus itself. The contiguous structures, viz., the optic commissure and nerve, are often in relation with these sinuses, being separated only by a thin layer of bone, from one fourth to one and a half millimetres in thickness and poorly supplied with nutrition, so far as we know, deriving its nourishment from the periosteum lining this cavity.

Cases are seen in which this posterior wall is found to be necrosed; but not until operative procedures have been made upon the anterior wall do

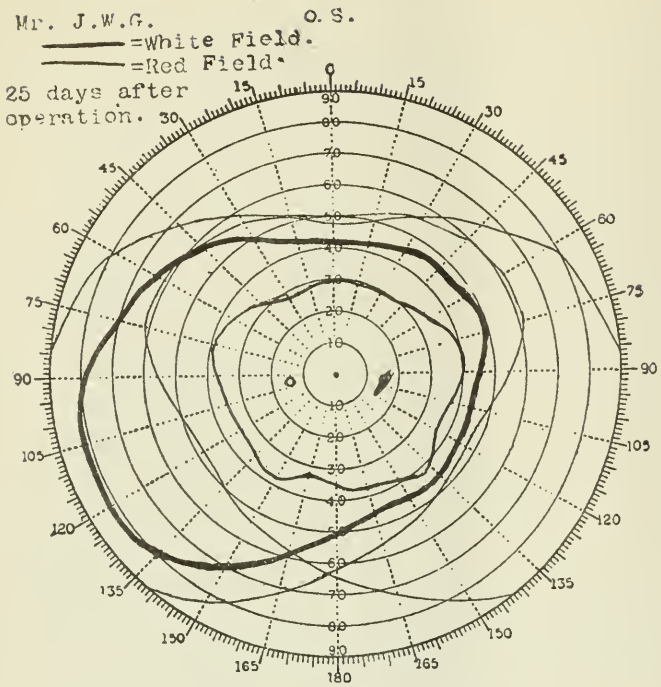

Fig. 2.—Case I, after operation.

we get this information. With an inflammatory condition of the mucous membrane of the nasopharynx probably closing the natural ostium and causing retention of pus, granulation tissue, or a mucocele of the cells of this cavity, the destruction of tissue, with the inflammatory process that may ensue, due to its close connection to the optic nerve in the surrounding tissues, becomes evident.

In the nasal cavity we are dealing with turbinal bodies with free blood supply, as great as any other organ in the body of similar size, covered with

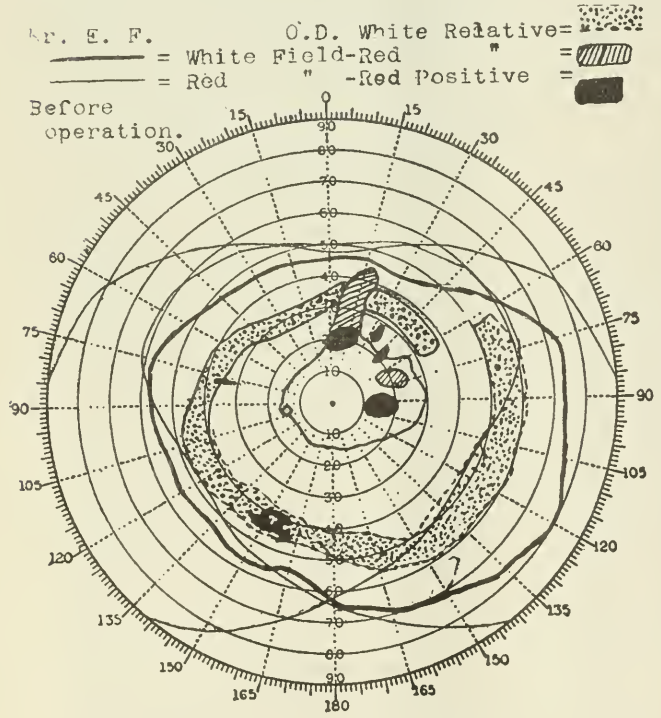

Fig. 3.—Case II, before operation.

mucous membrane of the same character as that of the pharyngeal wall, and subjected to variations of blood supply. These variations may be due to effete products from imperfect assimilation or combustion of various substances, all of which have a specific effect upon this mucous membrane and constitute an added factor for infection of these sinuses.

While an unilateral optic neuritis is generally suggestive of sphenoidal trouble it is not pathognomonic, and does not give any measurable degree of assurance that this cavity is infected, for many well authenticated cases of optic neuritis whose ætiological factor is brain tumor are on record. There are cases of medium degree of passive congestion of the fundus which later became a decided neuritis, due to infection of this sinus. Recall to your mind that the drainage from the eye by means of the superior and inferior ophthalmic veins is not its only source,

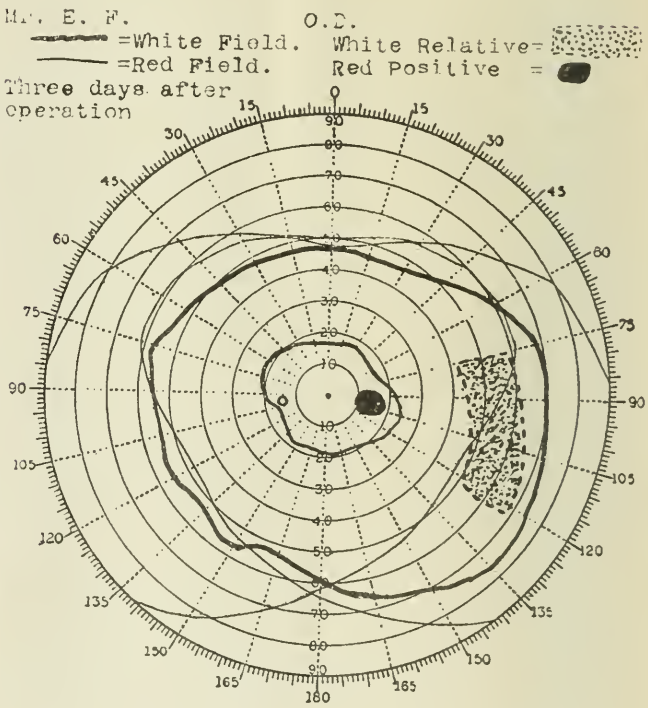

Fig. 4.—Case II, after operation.

there being a direct connection with the vena ethmoidalis as another avenue of infection.

Regrettable as it is, we have no anatomical basis upon which to base the intimate relation that must exist between the lymphatics of the eye and those of the sphenoid and ethmoid, with the result that we must be contented with recording our clinical investigations of optic neuritis, choked disc, etc., which should always include a thorough examination of the sphenoidal and ethmoidal sinuses as well, for many are the patients that recover normal vision or nearly so following operative measures upon these sinuses.

We now know that the teaching of intracranial inflammation of the optic nerve, such as we find in our textbooks to-day, is decidedly defective. When a better understanding of these sinuses is brought forth a rearrangement of our present classification of optic neuritis will be the result. In support of a

new classification and an aid to diagnosis I wish to report five cases with perimetric charts before and after operation upon the sphenoid and posterior ethmoidal sinuses. While the number of cases is too small to draw radical conclusions, the fact that the charts show such similarity in every case before and after operation is worthy of further consideration.

The possibility of a central scotoma being present in many cases of sphenoidal sinus involvement is first mentioned by Fuchs and Birch-Hirschfeld, the latter believing that the damage first taking place in the papillomacular bundle, due to its vulnerability, and that it constitutes one of the early symptoms of infected accessory sinus. Schäffer, Onodi, Schmieglow, and Hoffmann state that in numerous cases of sphenoidal suppuration no changes in the visual power could be detected. Such were the observations made in several of my cases.

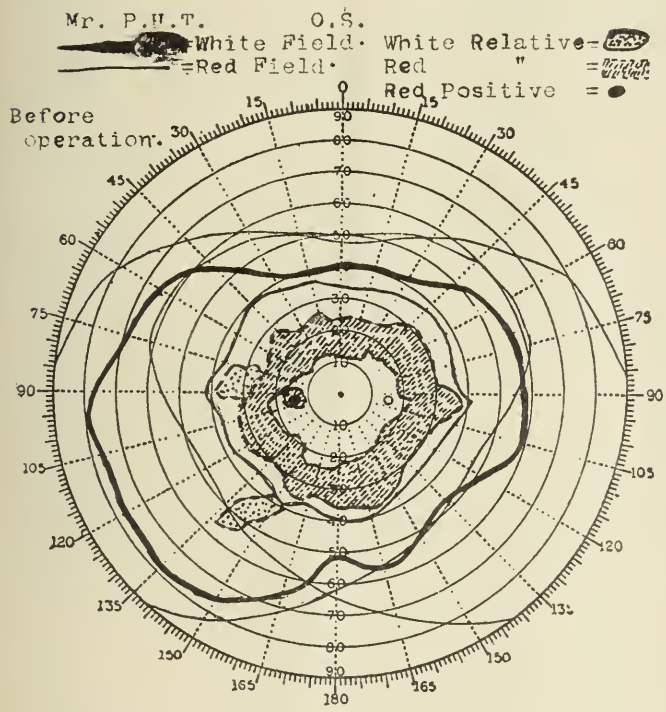

Fig. 5.—Case III, before operation.

Contrary to the findings of Grünwald, Ziem, Berger, Kuhnt, and Bryan, Henrici and Häffner found a normal visual field in thirty-six cases of accessory sinus disease. In the series of cases I report, and seven observed since, I have failed to find a normal visual field, enlargement of the blind spot being the rule with isolated scotomata in the intermediate zone in the cases in which pus was demonstrated by the probe or was present in the middle turbinate region. In none of my cases have I demonstrated a central scotomata whether pus was present, either before or after operation. In all of my cases in which pus, granulation, or mucocele became evident after operation there was a characteristic scotomata of the ring or annular type occurring in the intermediate zone, as well as an enlarged blind spot.

By referring to Figs. 1, 3, 5, 10, the ring scotomata is evident and would warrant the hypothesis that involvement of the accessory sinuses has taken

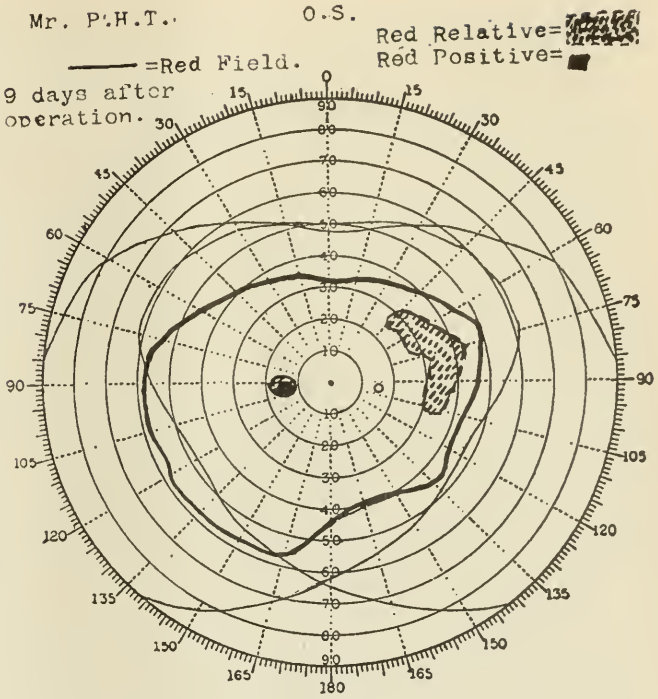

Fig. 6.—Case III, nine days after operation.

place, when the retained infection is not evident to the probe and this ring or annular scotomata is present. Where there is evidence of accessory sinus involvement present by inspection of the nares, the appearance of all my visual charts is as shown in Fig. 14, this being typical of cases of this character.

I have been able to demonstrate scotomata of the character described which are at such variance to the reports of all other writers who report normal visual fields, that I believe that the report of these

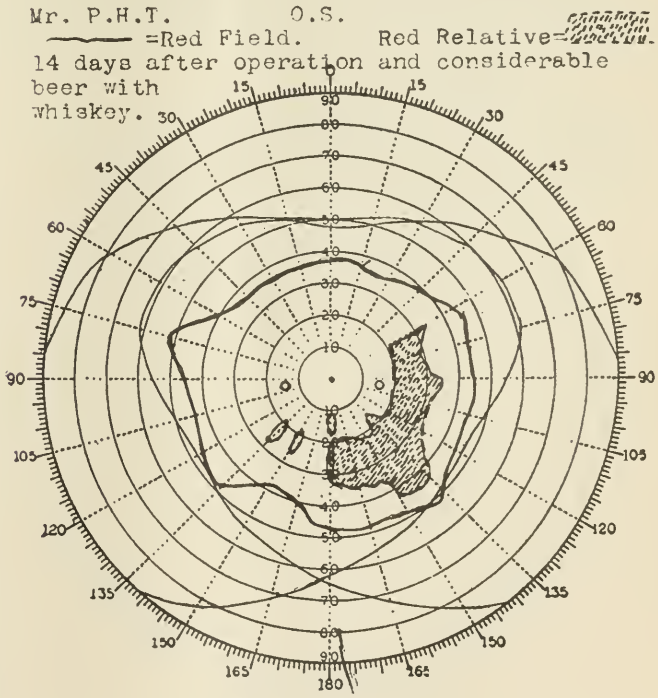

Fig. 7.—Case III, showing recurrence.

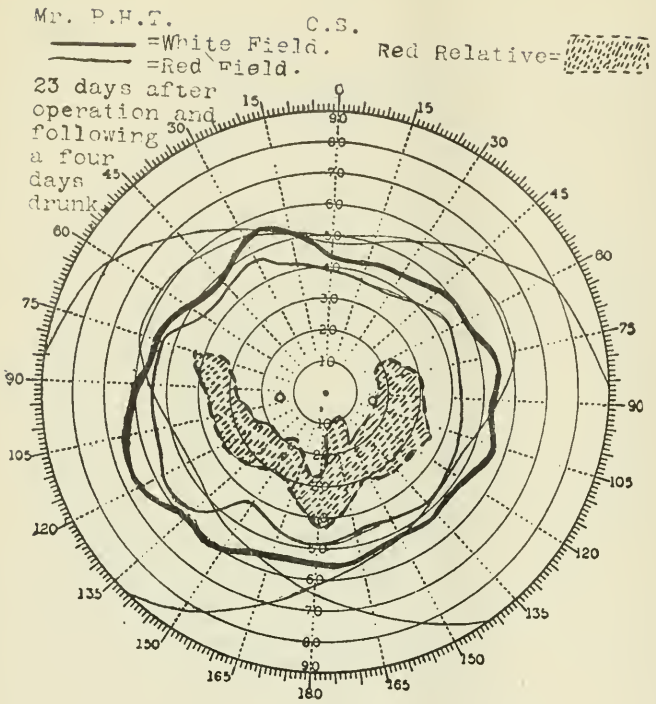

Fig. 8.—Case III, showing recurrence.

cases with their visual fields is warranted. My observations have led me to believe that many cases of infection of these sinuses have been overlooked, due to the fact that while charts have been made, there are many cases in which perimetry was not practised. The haste and inaccuracy with which charts have been taken in some cases often renders them of no value.

Personally I believe that it is good practice to open the sphenoid in cases of an optic neuritis or choked disc, showing paracentral scotomata in the visual fields, no possible harm being done if there is not an involvement of the sinus, and if it is present we have eradicated one of its ætiological factors.

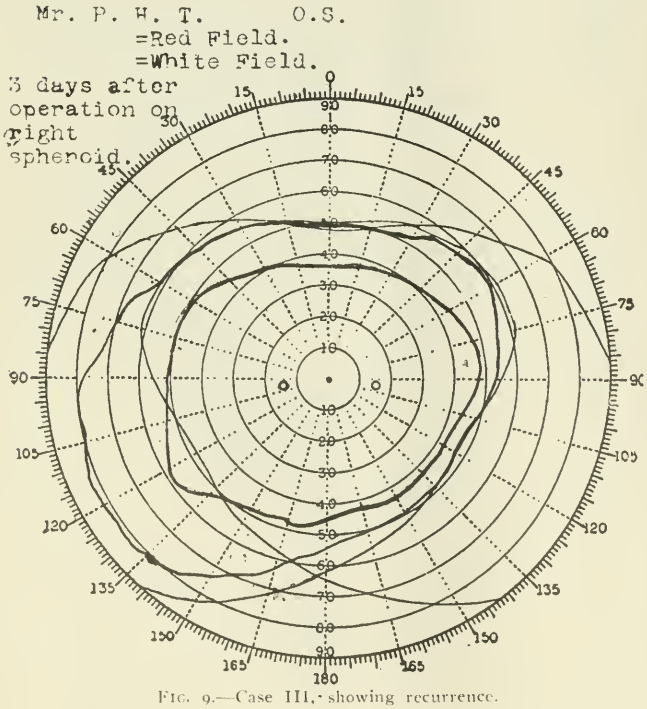

Fig. 9.—Case III, showing recurrence.

Case I. Mr. G. W. G., age forty-two, complained of a pain over the left forehead in the region of the supra-orbital nerve. This was always followed by a headache lasting all day long. It was often present on arising in the morning, and was accompanied by a more or less stuffed feeling in the nostrils. This condition had been present for a period of fifteen years. Examination of the right fundus showed it to be normal, while that of the left had but a moderate degree of passive congestion of the optic papilla. A careful field for red and white was taken with the result as shown in Fig. 1. The introduction of a probe into the left sphenoidal sinus did not reveal any pus, but increased the pain in the head to such a marked degree that I immediately examined the fundus and found the congestion had been very markedly increased. Operation was advised but rejected. Upon his return home the headache was of such an intense character that he was compelled to keep to his bed for two days, with a slight rise in temperature. The fifth day following he consented to operation under local anæsthesia. The anterior wall being removed the cavity was found to be filled with massive granulations, which were thoroughly removed. Entire subsidence of headache took place within twenty-four hours with no recurrence, and field of vision as shown in Fig. 2, twenty-five days following the operation. The patient feels like a different person owing to the disappearance of this daily headache.

Fig. 10.—Case IV, right eye before operation.

Case II. Mr. E. F., age fifteen, consulted me for headache and a blurring of vision which had been present for a period of two years. The nose showed no evidence whatsoever of pus, but upon probing the sphenoidal sinus pus and granulations were found. The right field showed the condition as in Fig. 3. Operation upon the right sphenoidal sinus disclosed pus in small amount, and large masses of granulation tissue. The result after operation consisted of entire disappearance of headache and field of vision as recorded in Fig. 4. This will in all probability have disappeared at the present writing, if opportunity afforded the taking of a chart.

Case III, that of Mr. P. H. T., age fifty, is one of the rarest cases that I have had occasion to see. The case was referred with a diagnosis of glaucoma, asking that an immediate iridectomy be done upon the only eye that the patient had, the right eye having been lost by an explosion of dynamite six years previously. Eserine had been

used for several months with some benefit for the pain, but not for the visual acuity. Five months previously he had been struck on the left eye by a small rock very lightly while starting a drill. Immediate treatment was given him by an oculist. For the past three months he had been seeing halos almost continuously all day long, and unable to read a newspaper for three months. I should state, however, that enucleation of his right eye did not take place until one year after the injury, when he was threatened with a possible loss of the left eye.

The condition of the left eye revealed an unusually well marked keratitis punctata, and a contracted pupil due to the eserine used. I had never seen a descemetitis and a glaucoma associated, and naturally doubted the diagnosis. An accurate perimetric chart, as shown in Fig. 5, led me to suspect sphenoidal sinus trouble. Accordingly I made a full dilatation of the pupil with a five per cent. atropine solution and was accorded a clear view of the fundus, showing an optic neuritis and chorioidal plaques, with cupping of the nerve only in the upper third of ½ D. Probing of the left sphenoidal sinus greatly increased this optic neuritis in a very few minutes, the cornea as well becom-

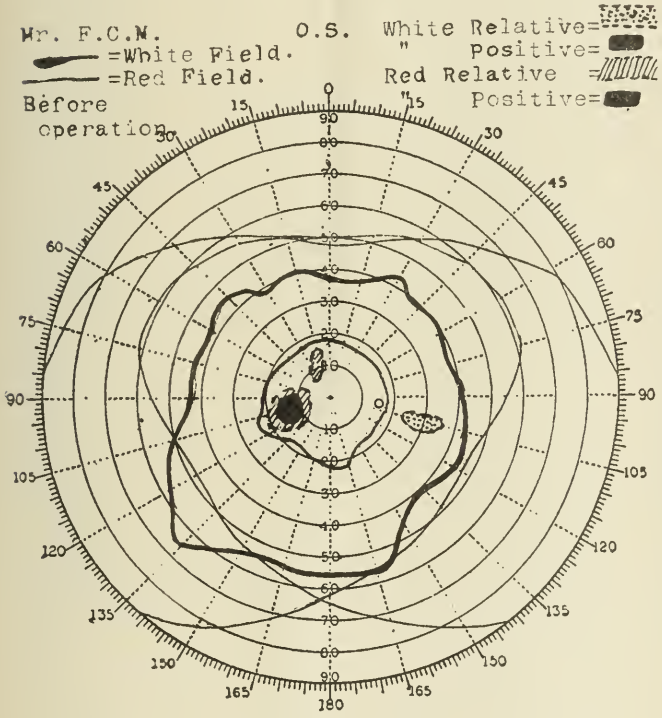

Fig. 11.—Case IV, left eye before operation.

ing hazy. The probe revealed the anterior wall necrotic. V=6/xii—2, previous to probing the sinus, and a blood pressure of 130 mm. Hg., with a pulse varying between 92 and 100 to the minute. This man had always been a fairly heavy drinker. Immediate operation was performed upon the left sphenoidal sinus, with the result that vision improved to 6/vi—2, with a cylinder correction of —50, axis 180°, five days later. This improvement he maintained with a visual field as shown in Fig. 6 nine days after operation. He was allowed to return home and immediately had a few drinks. The halos returned with a corresponding diminution of the vision, and upon taking his visual field it was found as in Fig. 7. A thorough washing out of the left sphenoidal sinus resulted in no apparent benefit, and vision was not improved by this procedure. The patient was watched for a week, when he went on a spree for four days, and upon his return the cornea was decidedly hazy, so that fundus examination was out of the question, and a chart as Fig. 8. I then opened the right sphenoid and curetted it, pus in abundance being present. During the interim previous to opening this sphenoid, ethyl morphine hydrochloride and iodoform together were used for its lymphagogic effect, with no improvement in the clearing of the fundus or cornea. The field of vision was then as in Fig. 9. He was then allowed to return home for a period of one week and there was a return of

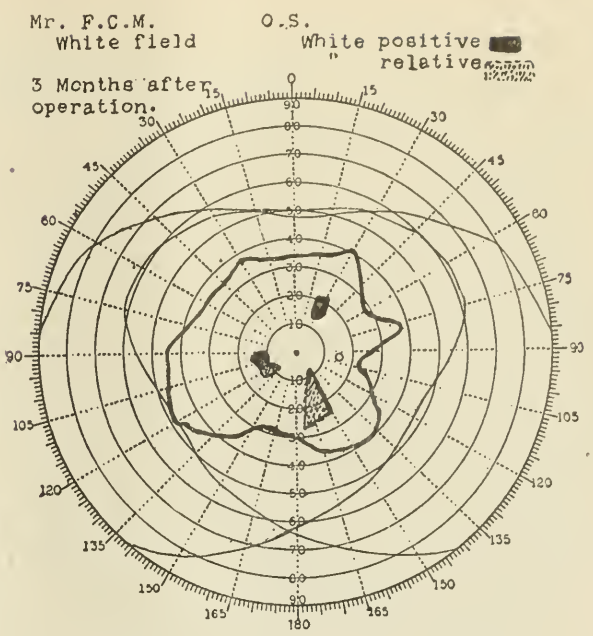

Fig. 12.—Case IV, left eye three months after operation.

the halos. The left middle turbinate was then removed and the ethmoid cells curetted, the cornea and fundus immediately becoming hazy from visible clouding of the vitreous as well. The following day the fundus and its details were easily made out, but the edges of the optic nerve and papilla were decidedly fluffy. At the present time this has cleared and the vision is 6/vi, with his cyl. correction.

Case IV. Mr. F. C. M., age thirty-nine. History of a specific infection twenty years ago (?) and probably three months ago. Diagnosis, double optic neuritis. Vision, right 6/lx, left 6/lx; patient volunteered the information that the left vision had been poor for years. The patient was suspected of having an intracranial tumor and accordingly was placed in the hospital for observation, as well as for the effects of pilocarpine sweats. There was improvement in the vision of the right to 6/xii, the left not at all. Upon leaving the hospital a perimetric chart of the right was taken, Fig. 10, that of the left Fig. 11. The right sphenoid was opened and curetted, the vision improving to 6/vii the following week, and four weeks later

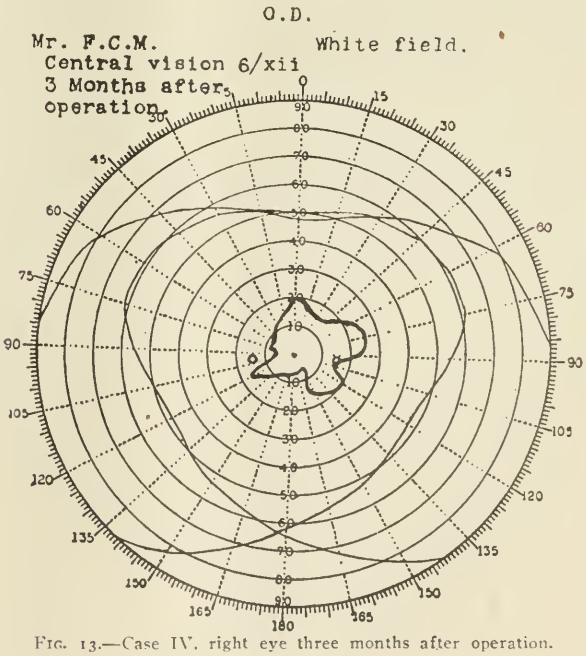

Fig. 13.—Case IV, right eye three months after operation.

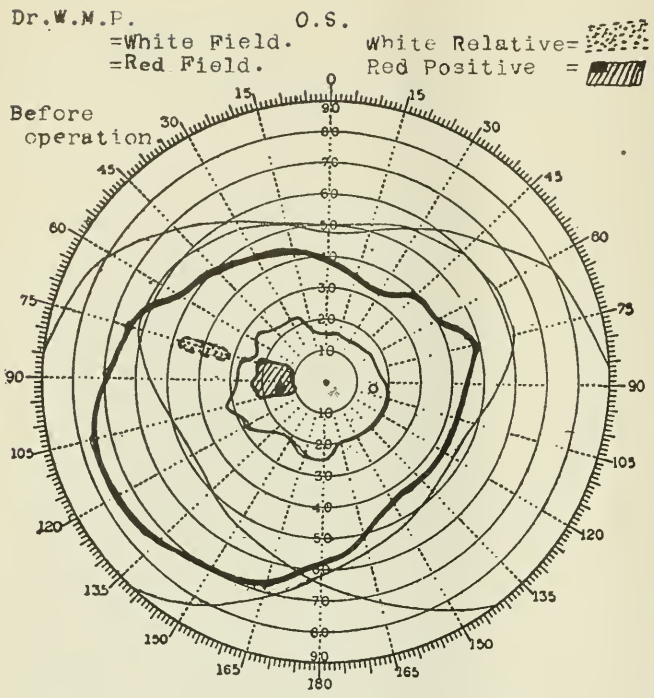

Fig. 14.—Case V, before operation.

was 6/vi. The posterior wall was found to be necrosed. Upon syringing this cavity nausea and vomiting took place, compelling the patient to be under care in bed for five days with a temperature of 100° F., during which time he lost ten pounds.

I opened the left sphenoid and curetted the same after taking a perimetric chart as Fig. 11. Immediately upon opening this sinus the patient remarked that he saw the end of my nose, which previously could not be seen. Vision improved to 6/xxx and bids fair for further improvement. The operations diminished the marked bulging of both eyes which had always been present before the fundus condition had become evident. The appearance of the fundus at the first examination led me to consider this as an apparently hopeless case, but at the present writing the left is as Fig. 12 and the right has gone on to a marked atrophy as Fig. 13.

Mercurial injections to the point of saturation were employed before operation, but with no apparent change in the visual acuity or the perimetric charts.

Case V. Dr. W. M. P., age fifty-seven, previously been in good health except for an attack of the grippe occurring last January. There was no discerible discharge, but he complained of a bad taste and odor from the nostrils. Field of vision before operation as Fig. 14. He had an oppression which he claimed was in the region of the ethmoid. This case was treated for a period of three months with Massolin culture with no apparent benefit whatever. Inasmuch as the odor and bad taste had not been relieved I decided to open the sphenoid, which I did, packing the same with iodoform gauze, five per cent. In this case the odor and discharge entirely ceased at the end of the fourth week. At the expiration of the fourth week field of vision as Fig. 15.

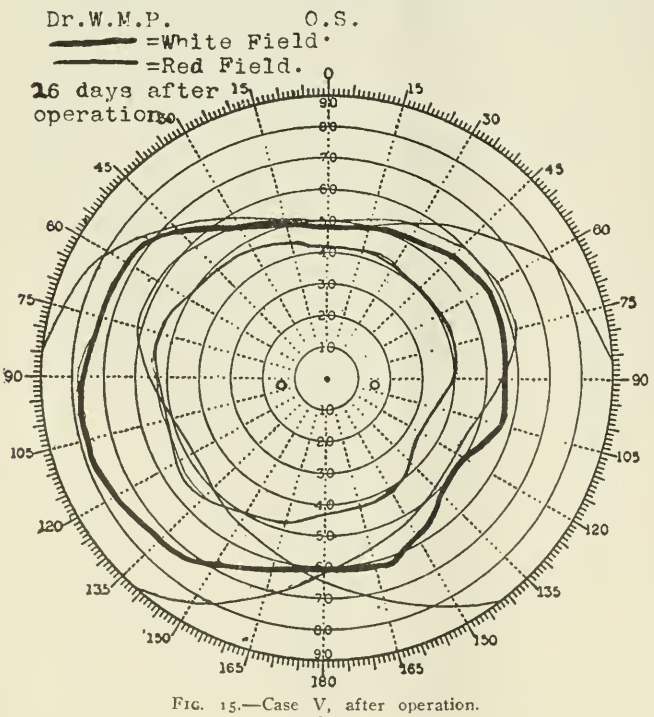

Fig. 15.—Case V, after operation.

The several theories that have been brought forth by Leber, Deutschmann, Schmidtmann, Deyls, and Knapp do not appear to be applicable in view of the pathological findings of Schieck. The fact that in several of my cases probing of the sphenoid immediately increased the fundus congestion, and in one case the cornea became hazy leads me to believe that these cases are really the result of absorption of toxic products from this sinus through the lymphatics, although I am well aware that so far there has not been any established relation between the lymphatics of the eye and this sinus other than the very noticeable widening of the perivascular lymph channels in the axial strand, demonstrated first by Schieck pathologically.

CONCLUSIONS.

(1) The central visual acuity may or may not be diminished, although it is usually lessened.

(2) Normal visual fields without scotomata would indicate imperfect perimetric chart, hasty procedure, or indifferent taking of the same.

(3) The absence of pus in the nose, with or without proptosis, does not indicate a normal sphenoid.

(4) Relative scotomata for red or white are always present, regardless of whether the blind spot is enlarged or not.

(5) Contraction of the field of vision always for red, maybe for white.

(6) Scotomata disappear before the field enlargement takes place, following operative procedures.

Note.—Since this article was written I have made perimetric charts of twelve additional cases, all of which show the characteristic scotoma described, that will form the basis of a future communication.

411-414 White Building.

UTERINE FIBROMYOMA COMPLICATING PREGNANCY.*

By R. S. Hill, M. D.,
Montgomery, Ala.,
Gynæcologist to The Laura Hill Hospital.

Notwithstanding fibromyoma of the uterus are found on post mortem examination in twenty per cent. of women beyond thirty years of age they are infrequently met with clinically when pregnancy exists as is evidenced by the statistics of Pinard, who reports finding them in only eighty-four of 14,000 cases of pregnancy. The reason for this is that many of these growths are too small to be de-

*Read before the Medical Association of the State of Alabama, at Mobile, April, 1910.

tected by the ordinary obstetrical examination and then, too, thirty per cent. of women with fibromyoma, in contrast to ten per cent. without, never become pregnant, and moreover of those who do conceive the average number of children is two and a half, which is about one half the normal.

It has been shown that fibromyoma, especially the submucous variety which represents ten per cent. of the whole, causes an abnormal condition of the endometrium and also in from fifty per cent. to sixty per cent. of women with these growths there is a diseased condition of the ovaries and tubes. The abnormal changes in the tubes—"the sacred highways through which the elements of future generations must travel"—may serve as a hindrance to the union of the spermatazoa and ovum, or should this union be effected make uncertain the passage of the fertilized ovum to the uterus. Here we have an explanation of not only the increased sterility in these women but of the comparative frequency of ectopic gestation. Kelly and Noble report ectopic gestation in 6 of 934 of their cases of pregnancy with fibromyoma while according to King 1 in 500 or 1 in 1,000 represents the usual frequency of tubal gestation. Should the fertilized ovum reach the uterus it will probably find in the endometrium a subnormal soil incapable of sustaining it to a full growth or development. I am inclined to attribute abortion in these women more to this defective condition of the endometrium than to pressure by the tumor, for the reason that it occurs, as a rule, between the second and third months of pregnancy, at which time, by the forming of the placenta, the uterine surface is given its first real functional test. It may be well to note here that in the submucous variety of fibromyoma, probably on account of the bulging into the uterine cavity, the ovum lodges on the endometrium covering the tumor more frequently than anywhere else. It is at this point, as we have said, that the greatest structural departure from normal is found, and consequently the least power of sustaining the growth of the fœtal structures exists. Premature labor is probably to be charged chiefly to pressure by the tumor, for it would seem that if the endometrium can and does sustain the growth of a placenta and furnish proper facility for the nourishing of the developing ovum to the period of viability it should and would, in all probability, be capable of continuing to do its duty to full term.

Just a word as to the effect of pregnancy on uterine fibromyoma. The intramural tumors may flatten out as the uterus grows and give the impression of having disappeared. This has probably caused the opinion, often expressed, that they are sometimes absorbed during pregnancy. I do not think this ever occurs, but on the contrary it seems certain that there is frequently an increase in size, caused sometimes by œdema and at others a true structural growth. That they are more liable to undergo a simple or sarcomatous degeneration during pregnancy seems also well established.

We come now to the chief dangers of uterine fibromyoma in pregnancy: 1. Presentation of the child. According to Olshausen, when fibromyomata are present, approximately fifty-four per cent. are vertex, twenty-four per cent. are breech, and nineteen per cent. are transverse, while, when they are absent, Schroeder gives as vertex ninety-five per cent.; breech, four per cent.; and less than one per cent. transverse. To an irregularity of the uterine cavity is probably to be attributed the increase of the breech and transverse presentations, carrying with them their inherent greater danger to child and mother.

2. Obstruction. Ninety per cent. of fibromyoma are of the fundus and posterior wall of the uterus where, as a rule, they are readily lifted out of the pelvis by the growing pregnant organ. Only those of this group, constituting a comparatively small proportion, that have become wedged or adhered in the posterior cul-de-sac or are submucous and of the lower segment of the organ, will cause obstruction. Of the ten per cent. from the anterior wall and cervix more than half will give no obstructive trouble. However, it should be remembered that tumors of any size growing from the cervix or other parts of the uterus not covered by peritonæum, though comparatively rare, will almost invariably cause obstruction. Submucous growths in the lower segment of the organ are especially liable to interfere with a complete expulsion of the placenta and membranes.

3. Hæmorrhage. This may be alarming and is usually in cases of submucous and intramural tumors. The cause of the bleeding is the failure of the muscular structure of the uterus to contract sufficiently at the placenta site, to close the sinuses left open by the separation of the placenta. This defective action of the muscular tissue is, as a rule, due to pressure by the tumor separating or causing an atrophy of the muscular fibres. However, it may be the result of placenta prævia which, for some reason, is comparatively frequent in these women.

4. Sepsis. If what we have said is true then it follows that puerperal sepsis is comparatively frequent in these subjects, because they furnish a very favorable soil for germ growth, as well as are more often exposed to infection by reason of the increased examinations and manipulations required to discover and overcome the abnormal condition.

Treatment. Of Pinard's eighty-four cases of fibromyoma complicating pregnancy, only four women required interference. However, this experience does not warrant a feeling of security that blinds the mind's eye to the dangers of the condition for, in fact, they are such as to call for our best efforts. If the tumor is out of the pelvic cavity or can be lifted above the pelvic brim an expectant plan of treatment should be pursued, provided, however, the patient can be kept where surgical measures may be promptly resorted to should conditions arise calling for them. If the latter cannot be done, then, in my opinion, interference is indicated even though it should give the fœtus no chance. By interference I mean myomectomy or hysterectomy with or without Cæsarean section, depending upon the viability of the child. Abortion should not be produced because it does not cure the woman and is attended in these cases with a risk of hæmorrhage and sepsis, which I have referred to, that makes it almost if not quite as dangerous as the more radical operations. I need not discuss the methods of preventing or checking hæmorrhage and sepsis as they

are familiar to every obstetrician. However, with reference to sepsis let me insist if there is reason to believe the seat of infection is a broken down fibroid, there should be no delay in doing hysterectomy, because there is little or no local resistance offered by such a structure to bacterial growth. Right here I may say to avoid this very condition a child should never be delivered with forceps if in so doing there is a probability of injuring the tumor. If the period of viability has not been reached and the tumor occupies a position that makes it a menace to the growth and birth of the fœtus myomectomy should be done. Let it be remembered, however, that what is begun as a myomectomy may, because of the number of tumors or perchance uncontrollable hæmorrhage, end as a hysterectomy. Carsten (*American Journal of Obstetrics and Diseases of Women and Children*, lix., p. 450) has collected 150 cases of myomectomy in pregnancy before the seventh month with twenty-two abortions, thirteen deaths, eighty-five full term deliveries, and thirty not stated. Boldt states that he has actually stopped an abortion by doing a myomectomy.

It seems to me that abortions should be less liable to follow this operation if done after the third month of pregnancy, when the placenta has formed and become well attached to the uterine structure. I am, therefore, inclined to advise delay until after this period, notwithstanding the increased risk of hæmorrhage during the operation that comes with the more advanced stage of the pregnancy. Of course the most favorable cases for myomectomy are those with the subserous tumors; at the same time growths deep in the uterine wall have been removed without interfering with the pregnancy. Mackenrodt reports a case in which the decidua was exposed and yet recovery took place without the pregnancy terminating. The dangers to the mother from myomectomy is hæmorrhage and later rupture of the womb. If the hæmorrhage cannot be controlled hysterectomy should be done. Though it is true that scar tissue is more liable to give way than normal uterine tissue, nevertheless I am persuaded, if the bed of the tumor is properly obliterated by layers of sutures there should be little risk of uterine rupture after myomectomy. Submucous growths projecting in or through the cervical canal have been removed from below without interfering with an existing pregnancy, so also have tumors embedded in the cervical structures. When the child is viable or near the period of viability and the tumor is fixed low in the pelvis we should endeavor to delay interference until as near full term as possible and then do Cæsarean section and myomectomy or hysterectomy as the condition indicates. There are times when the tumor is not fixed, that it is possible, on account of a loose attachment to the uterus, to lift it out of the pelvis even after labor has commenced. If there is a sarcomatous degeneration of the fibromyoma hysterectomy should be prompt and complete. Bland-Sutton states that simple degeneration in these growths may cause so much pain as to require hysterectomy. The mortality of Cæsarean section and hysterectomy is chiefly due to infection produced by vaginal examinations and manipulations before the patient comes for operation. This is largely preventable by a stricter observance of the principles of surgical cleanliness in obstetrical practice. Without infection caused in this way, I am persuaded these operations should not, at this day, have a mortality greater than five per cent., indeed I believe two or three per cent. represents more nearly the truth.

I wish now to give a very brief report of a few cases to emphasize some of the points I have endeavored to present as well as to bring out others that I have not touched upon.

Case I. Primipara, twenty-seven years old, and married eight years. After an active labor of twelve hours and no progress I was called by the attending midwife, and found the cervix high and well forward though soft and apparently fully dilated. The waters had not ruptured and a myofibroma larger than my fist occupied the hollow of the sacrum. With my fingers in the vagina by making firm pressure upwards between the pains I succeeded in lifting the tumor out of the pelvis. As soon as this was done the child's head came down and delivery was completed by the natural forces. After its completion the tumor could be detected attached by a long pedicle to the posterior surface of the uterus. Evidently the weight of the tumor pulling downward and the growing uterus upward was responsible for the length of the pedicle. This woman experienced a normal puerperium.

Case II. Woman, thirty-five years old, and married thirteen years. No children or miscarriages. Her sickness for several years had been rather profuse though her general condition remained good. She had missed her last two periods and had not been feeling well for some weeks before I was consulted. On examination several fibromyoma were detected projecting from the surface of the uterus. Diagnosticating pregnancy complicated by fibroids, I advised operation. On opening the abdomen the uterine walls were found filled with tumors, ranging in size from that of a small marble to a grape fruit. On account of the number of tumors a myomectomy could not be done, I therefore did a hysterectomy. The patient made a good recovery. Had it been possible to keep this woman under observation I would have delayed operating with the hope that pregnancy would continue to the period of viability and thereby the child saved. However, this could not be done as she was of the poorer class and lived in the country some ten or twelve miles from the nearest physician.

Case III. This patient was referred to me by Dr. J. M. Anderson, of Montgomery, Ala. Multipara, forty-two years old; married twice; one living child eighteen years old by first husband; none by second. General condition good. During the last two years she had three miscarriages between the second and third months of pregnancy. Her menses had been regular up until the period previous to her consulting Dr. Anderson, which did not occur. On examination the uterus was found enlarged and wedged, as it were, in the pelvis by fibroids growing from its surface. The largest tumor grew from the back wall of the womb and was firmly adhered in the posterior cul-de-sac. The patient said she felt as she had just before each of her three miscarriages and that she, therefore, knew she was going to have another one. Diagnosticating pregnancy threatened with interruption by fibromyoma of the uterus and being opposed to abortions, for the reasons that I have already given, I concluded to do a myomectomy or hysterectomy. When the abdomen was opened from the number of tumors and their fixedness in the pelvis it was clearly impossible to do anything else than the latter. In removing the uterus the vermiform appendix was found covered by adhesions and attached to the largest fibroid and was therefore excised. After stitching up my incision Dr. Anderson reminded me of the earnest request of the patient to be relieved of hæmorrhoids, from which she had suffered for several years. I yielded to her wish and removed them, notwithstanding I do not think it is, as a general rule, advisable to do a rectal operation at the same time that an abdominal is done, as the former interferes with giving enemata, which are frequently indicated after the latter. However, in this case no trouble was experienced, and the woman made a good recovery. I had no inclination to delay the operation in this case, because I

was quite certain from the history of repeated miscarriages as well as from the fixed condition of the uterus in the pelvis that pregnancy would not continue much longer.

I believe this is a case in which the abortions were caused by the physical interference, offered by the tumors, with the growth of the pregnant womb rather than a diseased state of the endomometrium. This is contrary to what we have said is usually the case.

Case IV. Primipara, twenty-four years old, married six years. Came from near Ozark, Ala. For ten days or more before I saw her she had had a rise of temperature and suffering with severe pain in the pelvis, more intense on the right side. She had missed two menstrual periods and had all the indications of an early pregnancy before the acute illness began. On digital examination the uterus was found enlarged and fixed in the pelvis. In the cul-de-sac of Douglass a mass could be felt, but its character could not be made out, because of the severe pelvic inflammation. An operation was advised and accepted. On opening the abdomen many intestinal adhesions were encountered. As these were broken up an abscess was entered behind the uterus and to the right of the median line. Below the abscess a fibromyoma was found in the cul-de-sac with the vermiform appendix, as the focus of suppuration, attached to its upper surface. Though it was clear that acute appendicitis was directly responsible for the illness of the patient, nevertheless the removal of the tumor was imperative, because of the desirability of vaginal drainage for the abscess and the certainty of the tumor, on account of its fixedness, giving trouble at if not before confinement. Myomectomy was inadvisable on account of infection interfering with the healing of the uterine wound or causing puerperal sepsis should abortion follow. I, therefore, did a complete hysterectomy—leaving a vaginal drain but closing the abdominal incision. Recovery was uninterrupted and prompt.

Case V. This woman was referred to me by Dr. Johnson, of Tuskegee, Ala. Thirty-three years old and married several years. In good general condition and five months advanced in pregnancy. She had intense spasmodic pains on the right side between the umbilicus and the anterior superior spine of the ilium which confined her to bed and necessitated the frequent administration of opium. A tumor about the size of a fist could be felt at the seat of pain. After keeping her in the hospital under observation several days and noticing a steady increase in her suffering an exploratory incision was made. On opening the abdomen we found the tumor to be a degenerated, probable sarcomatous fibroid of the uterus. Considering (1) the liability of the pregnancy to be prematurely terminated by the irritation, as indicated by the spasmodic pains, due to the diseased area; and (2) the danger of a rupture of the uterus at the point involved before or during labor; and (3) lastly though chiefly, the probability of the sarcoma, for such it was thought and afterward proved on microscopical examination to be, involving maternal structures that would make the life of the mother a certain sacrifice, it was decided to remove the entire organ with its contents intact. This was done and the patient made a good recovery and has had no return of the disease, though it has been some years since the operation.

Case VI. This patient was brought to me by Dr. Holly, of Samson, Ala. She was a multipara, thirty-two years old. She was about four months advanced in pregnancy and had a fibroid tumor about the size of a cocoanut growing in the lower front wall of the uterus. A median abdominal incision was made. The uterine tissue covering the tumor was split vertically and the latter hulled out. The cavity left in the wall of the uterus was accurately closed by several rows of continuous catgut sutures. The peritoneal margins of the uterine incision were brought together with interrupted linen sutures. The patient sustained a surprisingly small loss of blood and was in good condition at the completion of the operation. As she came out of ether an eighth of a grain of morphine was given hypodermically to prevent uterine contractions and ordered repeated if necessary. The second dose was not required as there was no uterine pain though there was a slight bloody flow from the vagina the next day. She made an uninterrupted recovery, and I am advised passed through a normal confinement at the end of her nine months of pregnancy. Had I been able to keep this woman in the hospital during the full time of her pregnancy I should have been inclined to delay operative interference until, at least, the period of viability as the safest course for the fœtus, but this was not possible and I did what I considered best under the circumstances. The gratifying result in this and like cases adds to the accumulated evidence of the marvelous possibilities of present day surgery.

ACUTE INVERSION OF THE UTERUS:

*Report of a Case.**

By John A. McGlinn, A. B., M. D.,
Philadelphia,
Gynæcologist of St. Agnes Hospital.

Case. Mrs. V. B.; white; age twenty-seven; primipara; first seen April 26, 1909; first day of last menstrual period, December 14, 1908; expected confinement September 20, 1909. The usual objective signs of early pregnancy were noted. A pelvic examination showed the vagina and cervix normal with the signs of pregnancy present. The internal conjugate was found to be normal. The uterus was in good position and symmetrically enlarged to the size of the fourth month of pregnancy. The external measurements were all normal.

The patient stated that since her conception she enjoyed better health than ever before, appetite excellent, bowels regular, slept well and at no time did she even have the slightest sign of morning sickness. The urine showed a heavy ring of albumin and many hyaline and granular casts. The urine was examined every week during her pregnancy and the morbid elements referred to were always present. The total daily amount of urine averaged about forty ounces. An estimation of the ammonia nitrogen was not made. At no time did she show any evidences of toxæmia. The examination of the lungs was negative. An examination of the heart disclosed a loud mitral regurgitant murmur which increased in intensity as pregnancy advanced. At no time was the heart incompetent. Twice during her pregnancy she fainted; these attacks were not severe and were due to emotional excitement induced by worry.

She was admitted to St. Agnes Hospital, September 12, 1909, having been advised to enter the hospital at least one week prior to her expected confinement. Examination at that time showed the fœtus to be in the left occipital anterior position, fœtal heart sounds, 136 to the minute, general condition of the patient excellent.

She fell in labor early on the morning of the following day, September 13th, just one week before her expected time. Labor progressed normally throughout the day. Early in the evening she complained of dyspnœa and as the heart action was very rapid it was decided best for the patient to terminate labor. Ether anæsthesia to the obstetrical degree was induced and the baby delivered after an easy forceps operation. A slight median tear resulted, and three sutures of worm silk gut were introduced to close the rent. While waiting for the placenta to be delivered before tying the sutures the resident physician called my attention to the fact that at no time since the delivery could he feel a contracted uterus. I then examined the abdomen and found the uterus very much enlarged, soft, and flabby with no indication of contractions. A hypodermic injection of ergot was given and all abdominal manipulations stopped. Necessary orders were then given to combat expected post partum hæmorrhage. The patient came well out of ether in about ten minutes. At this time she had one severe pain which was followed by the expulsion of a mass which fairly shot out of the vagina. An examination showed this to be the uterus with the placenta still firmly attached. The uterine cavity was completely obliterated and an abdominal examination showed the typically described cup shaped depression. There was no hæmorrhage and no shock whatsoever.

Anæsthesia was again induced and an effort made to reduce the mass with the placenta still attached. This could not be accomplished so the placenta was detached. In beginning the detachment some difficulty was encountered as we could not see the point of attachment; the

*Read before the Philadelphia Obstetrical Society, April 7, 1910.

placenta and uterus seemed as one. By gradually wiping down on the uterine wall with a gauze sponge a point of cleavage was reached and the placenta detached without difficulty The uterus was now easily replaced. When the fundus was forced back beyond the cervical canal it sprang back in place very much like a rubber ball that has been exhausted of air does when it partly refills. After reposition the uterus was irrigated with hot bichloride solution, 1 to 2,000, followed by sterile water and packed with sterile gauze. A hypodermic injection of ergot was given and orders left to place the child to the breasts so soon as the patient was well out of ether. The gauze packing was removed the next morning and a vaginal douche of bichloride of mercury, 1 to 2,000, was given, followed by sterile water. Temperature and pulse remained normal throughout the puerperium. The puerperium was without incident.

One week before the patient's delivery she complained of an acute pain in the occipital region which was promptly followed by a partial blindness in both eyes. She was referred to Dr. T. B. Holloway whose report follows:

"If you remember after my first examination of Mrs. B. I suggested one of three possibilities; a vascular lesion, growth, or a toxæmia in consequence of her pregnant condition. While I have not seen the patient since my examination on September 19th I have regarded the ocular changes as due to a toxæmia.

"This case is of unusual interest as hemianopic types of amaurosis associated with pregnancy are unusual. As I mentioned to you before this is the first case of this type I had ever seen.

"September 5, 1909. Vision of each eye, as taken in the subdued light of the room was ¾+. The pupils were round and equal and revealed no deviations from the normal in their various reactions.

"No changes could be noted in the media, while the discs were of normal tint and the retinal vessels, choroid, and retina were also free from any demonstrable ophthalmoscopic pathological changes. Upon taking the visual fields I found a left homonymous superior quadrant defect for both white and colors.

"The patient was again seen on September 19, 1909, and at this time the vision in the peripheral portion of the quadrant defect had partially cleared leaving the more central portion of the quadrant still completely blind for white and colors. As upon my previous examination I failed to find any fundus changes. Vision in each eye ⅜."

An examination two months after labor showed good union of the perineal tear. The vagina is normal, the uterus in good position and of normal contour. The heart lesion still persists, and there is no change in the fields of vision.

This case is reported, 1, on account of the rarity of this lesion; 2, the absence of the usual supposed causes, faulty use of Credé's method, and undue traction on the cord or a short cord (the cord measured seventeen inches); 3, because the inversion was spontaneous; 4, the absence of classical symptoms, and, 5, on account of the uncomplicated recovery.

Acute inversion of the uterus is probably the rarest complication of labor met with. Ashwell writing in 1848 (*Diseases of the Female,* Edited by Paul B. Goddard) says: "In many years' private and consultation practice I have only met with it twice; and in more than 8,000 cases of labor occurring at the Lying-in Institution of Guy's Hospital we have not had a single example. The obstetric patients in Petersham Ward, have, during the past thirteen years exceeded 800, and yet neither among them, nor in the far greater number of the obstetric outpatients, has there been one case either of recent or chronic inversion." Winckel did not see it once in over 20,000 deliveries. Beckman did not see a single case in 250,000 labors at the St. Petersburg Lying-in Hospital. Madden saw it only once in 190,833 deliveries at the Rotunda Hospital, Dublin. C. von Braun did not see a single case in 250,000 deliveries. Aveling states that it occurs once in 100,000 labors, and B. C. Hirst once in 140,000. Quoting from R. C. Norris (*American Textbook of Obstetrics,* page 145): "Kehrer states that the accident is thought to occur once in 2,000 cases. Probably uterine inversion is more frequent than published reports of cases would lead one to believe. It may be that in some cases if the displacement was recognized the fact was concealed; in other instances the accident was not discovered." This view is no doubt true in part, but when we consider that the statistics given are from hospitals of the highest standing the fact must remain that acute inversion is a very rare condition indeed.

The question of ætiology is perhaps still a debatable one. In view of the literature of reported cases we must now admit the possibility of spontaneous inversion as separate and distinct from that occurring as the result of faulty obstetrics. Beckman collected the reports of 100 cases and of these fifty-four were spontaneous. My own case is another example of this accident occurring spontaneously.

The generally accepted opinion of this condition is that it is due to undue traction on the cord in the delivery of the placenta, too firm pressure from above in the use of Crede's method, a short cord, (actually or relatively by being wound around the child's neck), precipitate labor, or by the attachment of a polyp at the fundus causing traction. While no doubt these conditions do produce inversion, and there are cases on record to confirm this view, it is hardly likely that they in themselves can produce it in a normal uterus. Many years ago Capuron said that "dilatation of the os uteri, and atony and flaccidity of the uterine parieties are the predisposing causes." It is hardly likely that any of the conditions previously mentioned could produce the accident unless the uterus was in the state as described by Capuron. In proof of this inversion nearly always occurs during the third stage of labor, frequently before the placenta has been detached. While it is true that inversion may occur some days after labor it is quite possible in these cases that a partial inversion had taken place at the time of delivery and had not been recognized on account of the lack of symptoms. In the 100 cases reported studied by Beckman fifty per cent. occurred in primiparæ. This is in support of the contention of the presence of atony and flaccidity as being necessary predisposing factors, as uterine atony is undoubtedly most frequent in primiparæ as the result of long and tedious labor.

The displacement must depend on some such predisposing condition in the uterus as that mentioned, or the accident would be an exceedingly common one as the faulty and vigorous extraction of the placenta is the most frequent sin in the obstetric decalogue.

If we admit the necessity of these predisposing factors being present the mechanics both of spontaneous and induced inversion becomes a simple proposition. In both varieties the fundus must be partly inverted into the uterine cavity and act as a foreign body. Uterine contractions coming on the mass is expelled the same as any other body in the uterus would be. In the cases of the induced in-

versions, those dependent on faulty extraction of the placenta, it is easy to understand how the fundus is pushed or pulled into the uterine cavity. In the cases of spontaneous inversions I feel that we go far afield if we attempt to find in the uterus itself the sole causes of this phenomenon. I believe that in these cases as in the other class the beginning inversion is caused either by traction or by pressure. Traction by the placenta in those cases where it is still undetached and by pressure either by weight of the intestines above or by contractions of the abdominal walls. In many cases all these factors may be in evidence.

The symptoms usually given are three in number, pain, hæmorrhage, and shock. In the majority of cases reported and in practically all current textbooks on obstetrics these symptoms are given as cardinal diagnostic points. Dr. Charles C. Barrows, in a report of a case of acute inversion before the New York Obstetrical Society, December 14, 1909, stated that in a review of the literature he was unable to find a case except his own which was devoid of hæmorrhage and all subjective symptoms. My own case was devoid of all the classical symptoms, but it must be recalled that the placenta was still firmly attached which would account for the lack of hæmorrhage, and the patient was partly under the influence of an anæsthetic which might be responsible for the absence of pain and shock.

The mortality of acute inversion is given at about seventy per cent. The patient may die in a few moments from shock. If the uterus is not immediately replaced it may become grangrenous or the patient may become septic. In one case reported by Newton Benson a knuckle of gut had become caught in the cup shaped depression of the fundus and the patient died of intestinal obstruction.

The treatment is of course immediate reposition of the uterus with the necessary measures to prevent the recurrence of the accident, the prevention of sepsis, and combating the effects of shock and hæmorrhage. The one serious question in the treatment is the management of the placenta in those cases where it is still attached. In two cases reported by Ashwell and in my own it was impossible to replace the uterus with the placenta still attached. The detachment was not followed by bleeding and the reposition became easy. Norris holds that when the placenta is entirely or partially attached it should be detached before reposition. If the cervix is contracted there is little danger of bleeding as the uterine vessels are firmly constricted at the upper part of the tumor. One argument against the detachment is that while we are taking time for this manœuvre the cervix is contracting and reposition becomes much more difficult. This is hardly a valid objection as the time taken to detach the placenta is so short that the operation of reposition could hardly be affected in any way whatsoever. If the placenta is detached first the accident is less likely to recur as we remove the offending weight, the uterus can be better packed, and we can be more sure of thorough cleanliness of the cavity to prevent sepsis.

113 South Twentieth Street.

SINGULTUS GASTRICUS NERVOSUS.

By Anthony Bassler, M. D.,
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Singultus, or hiccough, is a symptom expressed as a sound made by the sudden and involuntary contraction of the diaphragm, and the simultaneous contraction of the glottis which arrests the rising air in the trachea. Depending upon its cause, singultus may last for a few minutes or several hours or be continuous, and also, it may recur during days and months. Among the most numerous conditions in which it is present may be mentioned the diseases of the abdominal viscera (gastritis, primary and secondary ecstatic gastric atony, gastric carcinoma); enteritis, internal and external intestinal obstruction or other causes of intestinal obstruction or paresis (such as the postoperative cases), appendicitis, cholera; pancreatitis (usually suppurative); disease of the liver; peritonitis (especially when it involves the upper abdomen and the peritonæum diaphragmatis; and tympanites (such as the idiopathic dilatations or paretic conditions of sections of the hollow viscera of the alimentary canal);—diseases of the nervous system—viz., epilepsy, tumor of the brain, meningitis, hydrocephalus, shock, mental emotions, and hysteria; and certain constitutional conditions, such as diabetes, gout, chronic nephritis, some cases of gangrene of the lung, diaphragmatic pleurisy, dysmenorrhœa and pregnancy, alcoholism, Addison's disease, typhoid fever and typhoid states, and large hæmorrhages. The type I desire to draw attention to here is a functional nervous form occurring as a symptom of a neurotic condition of the stomach.

In most of the textbooks upon the diseases of the stomach the neurotic motor conditions are described under specific headlines, because some distinctive feature was predominant. Among such may be mentioned primary atony, acute postoperative dilatation of the stomach and duodenum, cardiospasm, pylorospasm, excessive nervous motility, regurgitation, merycism (rumination), eructatio nervosa, vomitus nervosus, nausea nervosa, pneumatosis, peristaltic unrest, antiperistaltic restlessness, and pyloric incontinence. To the genus of those in which some one symptom is particular, I wish to draw attention to the fact that a neurotic condition of the stomach can exist as a manifest clinical entity apart from any association with hysteria or other generally neurological conditions, and report that I have met with two clean cut cases of these in my practice.

Nervous vomiting, merycism, regurgitation, and eructations all result from a return of the gastric contents as the main symptom. In singultus gastricus nervosus a continuous hiccough lasting for a long time varying from weeks to months and without any gastric return at any time may be seen. The condition usually accompanies a hyperæsthesia of the stomach glandularis also continuous while the hiccoughing is the feature. As a condition it is rarely met with (seen by me in only two cases of several thousand neurotic stomach conditions), and most probably usually in well nourished young adults and most often in the female. When more

of these cases have been studied it is probable that an argument will be presented that those of singultus gastricus nervosus are only those of hysteria in which a continuous hiccoughing is prominent. Against this I wish to argue that the close study of these two cases in the way of heredity, past history, cause, imitation, syphilis, hæmorrhages, infectious diseases, chemical toxic causes (lead, alcohol, tobacco), and the usual symptoms of hysteria were not present, and both of them had a bona fide gastric hyperæsthesia accompanying them. The most careful examination in both failed to elicit any skin anæsthesia, hyperæsthesia, or paræsthesia, had pain, emotional crises, were mentally excitable or depressed or had loss of emotional control, were impulsive, had spinal or vertical pains, globus hystericus, vasomotor disturbances, disturbed sleep, somnambulism, or cerebral automatism, paralysis, contractures, tremor, ataxic or choreic movements, absence of skin reflexes, complete loss of concentric limitation of the visual field or disturbance of color sense, manifested the presence of hysterogenic zones, pseudoangina, amyosthenia, constipation, and other of the less common clinical symptoms observed in the more or less irregular course of hysteria. Both of these cases were exhaustively examined by competent specialists, among whom were neurologists, ophthalmologists, gynæcologists, and others, and both of them were considered as normal in all other respects, and I therefore believe that such a neurotic condition of the stomach does occur the cause of which is primarily situated in that organ, and that this gives rise to involuntary contractions of the diaphragm as a reflex manifestation.

Case I. Mrs. B. H., twenty-nine years old, first came under observation in my clinic April 10, 1908. Her family history was negative, her father being alive and well, her mother dead from an unknown cause, several brothers and sisters were well. History of nervousness, epilepsy, alcoholism, etc., in the family, negative. Her personal habits had always been good, she ate rather heavily of the substantial plain foods at regular meal times, drank nothing alcoholic, lived a happy and comfortable married life, and had no worry in particular excepting that she had not become pregnant, and this did not affect her much. Her bowels moved regularly once or twice a day.

At the time she complained of gastric distress which had begun about four months before and had become progressively worse; during this time she had been in the care of two physicians. The symptoms she complained of were a burning distress in the stomach after meals (even those of the lightest kinds), accompanied with epigastric distention, a weight in the upper abdomen, and a pressure in the lower sternum and chest. At these times some difficulty in breathing was present, occasionally a palpitation of the heart with a transitory headache, and a condition of nervousness from the distress at the time. At intervals, usually after a meat or a more abundant meal than usual, she stated to have had attacks of pain in the stomach (gastralgia) which necessitated her removing her corsets and perhaps going to bed. On two occasions a physician was summoned, hot applications to the epigastrium were applied, and in one case an injection of morphine was given; these seizures ameliorated after three or four hours time, and the pains passed off in about two more (probably when the stomach was empty of foods).

Following a purge the night before, an Ewald test meal was extracted which showed a return of 70 c.c. which was normal on macroscopical and microscopical appearance, free hydrochloric acid of 60, a total acidity of 65, and nothing else worthy of note. Examinations of her stools and urine were negative, and her blood showed 4,4700,000 red blood corpuscles; hæmoglobin, 89 per cent.; 6,900 white blood corpuscles; and the morphology of the reds and differential count of the white cells were considered normal. The physical examination was negative; the woman was well nourished, her stomach was normal in shape, size, and position, and nothing abnormal was noted in the abdomen, chest, mouth, etc.

On these findings the diagnosis of hyperæsthesia gastrica with slight increased gastric secretion was made, and the case was treated with a bland diet consisting essentially of milk, cream, butter, eggs, and well cooked cereals in amounts equal to 3,000 calories each day, and small doses of sodium bromide and tincture of valerian. She reported at intervals of two or three days for about four months, during which time she made a rather slow but steady recovery. At the end of the sixth week another Ewald meal was extracted which showed a decrease in the hydrochloric secretion to about one third of the former amount.

At her next to the last visit to the clinic at this period, she reported to have skipped a menstruation for the first time in years. On examination it was suspected that she was pregnant, and this was found to be so on a subsequent examination several weeks afterward. The medical treatments were discontinued and she was advised to take rather generally of all kinds of simple foods and report again after her delivery.

She reported again on June 12, 1909, and gave the following history. The child was born on March 15th, living but a few moments after its birth. She said that during the first three months of her pregnancy she was troubled with attacks of vomiting and morning nausea, but that after this she had had no gastric distress to speak of and was only slightly constipated during the last two months of pregnancy. Two months before the infant was born she began hiccoughing, at first at long intervals and then gradually becoming more frequent and pronounced. These seizures continued for the three months following her labor, became most troublesome and incessant, and on the return of the former gastric symptoms she associated the two as part of the same condition and again sought aid.

The physical examination at this time by several specialists in the clinic and myself failed to show anything other than that she was about the same type of a case as before excepting that she was hiccoughing at intervals of about every three minutes; this condition she said being decidedly less although not entirely ceasing during the night when asleep. A test meal extracted a few days after her return and an x ray plate showed practically a normal condition of stomach. On fluoroscopic examination distinct contractions of the diaphragm were observed at the time of hiccoughing.

In the beginning the case was most troublesome to treat in that no measures seemed efficient to control or mitigate the diaphragmatic contractions. However, as a result of large doses of sodium bromide (ten grammes a day), she gradually made improvement, and at the end of five weeks of this treatment was hiccoughing only two or three times a day. The diet previously mentioned was again instituted and persisted in, the doses of bromide lowered, and she finally made substantial recovery although compared to her usual weight she was short ten pounds.

I believe this to be a case of the condition I drew attention to, the diaphragmatic contractions being a symptom of this gastric neurosis, and in the beginning probably induced by the spasmodic contractions of the stomach and diaphragm (a condition common in pregnant women and the cause of the vomiting of the early months of pregnancy).

Case II. April 7, 1909. Mrs. E. B.; thirty-four years old; housewife; mother of two children, the oldest seven years, the youngest three years; family history negative; habits had always been good, ate regularly, lived a simple and happy home life, and drank very moderately of tea and coffee and nothing alcoholic.

Personal history. Patient had always been moderately constipated, although when she drank four glasses of water and ate fruits twice a day her bowels moved without further assistance. She had had some minor attacks of stomach distress in the past years, usually in the late winter when she had been housed up too much. These attacks were on the order of slight degrees of distress in the epigastrium, lasting only a few days and passing off with a little care in the selection of foods she partook of.

and at which times she always had taken a purge. She began with "stomach trouble" in the first part of February of the present year. She awakened one morning with a frontal headache, became nauseated, and vomited shortly. Toward afternoon the headache subsided (took acetylsalicylic acid), the nausea became less prominent, and she began to hiccough at intervals of about once every hour. On the following day she left her bed, the nausea was less pronounced, the vomiting had stopped, but the hiccoughing continued. Gradually, the distress after meals became intensified, consisting of weight, pressure, and distention in the epigastrium, eructations of inodorous and tasteless gases, and a more noticeable constipation. Sometimes when the distress was marked there were pains radiating from the cardiac region to the left shoulder and back. At these times she felt weak and often was troubled with palpitation. From the onset of the acute attack the hiccoughing continued becoming more frequent and regular. Fearing to intensify the always present distress in her stomach and particularly to augment the hiccoughing she kept eliminating certain foods—even the simple ones—until she was living on only small amounts of milk before I saw her. However, no measures at dieting seemed to assist her although under medical care of two physicians, the first of whom said she had "kidney trouble" the second "anæmia" (the writer telephoned the first attendant who said that he did not find albumin or casts in her urine). She steadily ran down in weight until just before she was forced to take to her bed she was twenty-seven pounds short of her original weight.

On my first visit she was in bed where she had been for five days, too weak to be about, and had not slept any to speak of in that time. Her emaciation and anæmia were noticeable, her face drawn and anxious, hiccoughing about every four minutes, and tossing restlessly in the bed. She had an aversion for foods and drink of all kinds, had taken only small amounts at the earnest persuasion of her husband, and altogether looked desperately ill. Nothing particular was found on careful physical examination except ing that her stomach was markedly tympanitic and the pyloric region reaching to two centimetres below the umbilicus, a hæmic cardiac and jugular murmur, and a regular pulse of rather small quality and a rate of from 105 to 120.

The laboratory findings of specimens obtained during the three days following were: Blood, red cells, 311,000,000; hæmoglobulin, sixty-two per cent.; white cells, 7,750; differential count normal. Fæces light colored, food particles normal, Gram differential stain not significant, no blood or mucus, ten grammes of fæces in 25 c.c. of water fermenting twenty-three per cent. of gas in twenty-four hours, and thirty-one per cent. in inoculated dextrose bouillon. Ewald meal, 79 c.c. return, starch apparently well digested, free hydrochloric acid, 21, combined hydrochloric acid, 29 (total, 50), total acidity, 57; enzymes normal quantity, no blood or increased amounts of mucus. Urine, twenty-four hours, 995 c.c.; specific gravity, 1.021, acid, no glucose, albumin, or casts; indican, oxalic acid, and uric acid in slight excess. Chlorine and nitrogen contents normal, phosphate contents normal, sulphate contents slightly raised; urea, 11 grammes.

This clinical condition ran on progressively for over three weeks. Consumption of food by mouth and retained on any one day was never more than 1,500 calories, and 1,000 more nearly represented the daily average. The hiccoughing was insistent day and night, and the acute distress caused by even small quantities of food or drink in the stomach showed that a high degree of hyperæsthesia of the glandularis was present. Rectal feedings were resorted to and fortunately these were well borne.

Progress in the case was slow and discouraging. Bromides and chloral hydrate even in fairly large doses by both mouth and rectum gave only slight if any relief of the hiccoughing which apparently was the symptom of grave importance. Ice bags, Priesnitz bandages, and hot moist applications to the epigastrium were unavailing but some benefit was observed by the use of mustard plasters to the epigastrium and back of the neck. Galvanism of the phrenics from the sides of the neck through the abdomen to the gluteal intervals was given, but no benefit from its use could be noted. A partial chloroform anæsthesia, not enough to deaden the sensibilities, was employed and during its administration inhibition of the hiccoughing was invariably brought about—the regularity of the spasms recurring in the same intervals as before when the drug was discontinued. The picture of the case for the three weeks in bed was pitiful to observe, the woman became markedly emaciated and the pulse fast and faint, and it looked as if a fatal issue was inevitable. For no therapeutic measure that I can definitely ascribe to it, the hiccoughing then began to lessen in frequency, the stomach became more tolerant, more nourishment could be sustained, and the general condition gradually improved (at the time she was being given hypodermically moderate doses of strychnine nitrate, 1/30 grain, every four hours, for its general stimulating and tonic effects). Three weeks after the beneficial effects took place (altogether nearly six weeks) she left her bed still very weak and hiccoughing about once every hour, but the seizures were not so audible and probably the spasm not so severe as before. In about four weeks longer the hiccoughing had stopped, and the woman then made a rather quick recovery. Eight days after her first day out of bed she was weighed and it was noted that she had lost forty-nine pounds, weighing at the time ninety-one pounds. She was weighed in my office on September 15, 1909, when apparently well and was about six pounds short of her usual weight. However, off and on, she still had some sensory distress in the stomach but no hiccoughing.

This case was like the first, excepting much severer in degree. It proved to me that the condition may be seen as a serious type of affection, and in certain instances may even terminate fatally.

Finally, I wish to state that true cases of hysteria in which hiccoughing is a feature are not uncommon and decidedly more numerous than those I have described. But in these, more or less manifestations of hysteria and the appearance of the case and its course are always present. In these, the diagnosis is not difficult, and this makes the differential diagnosis between the two easy. Where doubt may exist, the rather unimportant feature of local and persistent gastric symptoms, together with the fact that hiccoughing hysterics (even when this symptom has existed for a long time) do not show much if any general deterioration in health would be helpful in distinguishing them.

126 East Sixtieth Street.

THE CLINICAL SIGNIFICANCE OF DEPRESSION.*

By George E. Price,
Philadelphia.

Depression is an emotional state which may be either normal or abnormal; normally it is seen as the direct result of certain definite causes—as for instance—sorrow, disappointment, ill health, or business reverses. Again, it may be temperamental. Many individuals are what might be termed emotionally sensitive, passing through life in alternating periods of mild expansion and depression induced by trivial causes. There is also a class of individuals who seem always to live under a shadow; discontented, dissatisfied—the grumblers.

To be in style (for we have fads, even in medicine), one must note a thought or two from psychology. Herbert uses the term "dejection" in referring to a depressed mental state, and says that "dejection which becomes habitual is consumption of the character." Halleck tells us that "the best general tonics in the world are hope and joy; the reverse is true of grief, fear, and anger. The first emotional hygienic law is—Be cheerful." Sir Benjamin Ward Richardson well says: "The passions which act most severely in the physical life are—anger, fear, hatred, and grief. All emotions deepen by

*Read before the Northwestern Medical Society, March 7, 1910.

repetition. Looking on the bright side of life soon grows to be as much of a habit as the reverse. The truth cannot be too strongly emphasized that a habit of emotional feeling is, at the onset, often the result of an intellectual habit." Professor James says: "Refuse to express a passion and it dies. To sit all day in a moping posture, sigh and reply to everything with a dismal voice, and your melancholy lingers." Nahlowsky offers a classification of the passions, in which he groups depression on the passive or minus side, in association with overpowering astonishment, predicament, confusion, sudden loss of good humor, painful surprise, attacks of care and sadness, anxiety, shame, fear, and terror.

To-night, however, we will consider depression chiefly as an abnormal or pathological state, and it may be said to become abnormal when it occurs spontaneously, without adequate external cause. Here we must bear in mind that depression is not a disease, but a symptom, and I would place myself with those who believe that depression, in common with other abnormal mental states, should be considered not psychologically, but clinically.

As physicians, we are frequently called upon to make a diagnosis of a depressive condition, for abnormal depression occurs in numerous diseases, and is often so prominent a symptom that it obscures all other signs in the eyes of the laity. Depression is present in such functional neuroses as neurasthenia and hypochondria, and in such mental diseases as melancholia, circular insanity, dementia præcox, paranoia, paresis, and senile dementia. In considering these depressive states it is profitable to approach the subject first from the standpoint of age.

In *infancy and childhood* there is no distinctive, persistent depression; no true insanity with dejection; yet depression may be present, vague, and ill defined, and together with abnormal sensitiveness, introspection, self consciousness, or self distrust, may indicate an unstable nervous system and forecast a mental or nervous breakdown later in life.

During the period of *puberty or adolescence*, depression may appear as a symptom of dementia præcox, melancholia, or neurasthenia.

In *early adult life*, we recede as it were from adolescent insanity, and find melancholia the chief depressive state. Neurasthenia and hypochondria also contribute their quota of cases.

As *mature adult life* is reached, the depression of early paranoia and of paresis is added to that of melancholia, neurasthenia, and hypochondriasis.

In *middle life*, involutional melancholia is the dominating depressive state, and as *old age* approaches, senile dementia must be added to the already long list.

Melancholia is *par excellence* the insanity of depression; yet depression is no more melancholia, than is a cough, phthisis. However, it dominates the picture—persistent, painful, anguishing. Intellection is controlled by the feeling, and as Krafft-Ebing puts it: "Only such ideas as are in harmony with the state of the emotions can be entertained in consciousness." Thus the melancholic retains only painful and depressed images and ideas. Self accusation is conspicuous and often leads to the delusion of the unpardonable sin and the suicidal tendency. Memory and orientation are preserved. What has been said of melancholia applies also to the depressive curve of manic depressive or circular insanity.

Early in dementia præcox, it is common for the patient to pass through a period of depression, often associated with apprehension, fear, dread, because of the nature of his delusions and hallucinations. The ideas are illogical, foolish, often fleeting, and never perfectly systematized—although in the paranoid form there is present a tendency in this direction. The whole picture of dementia præcox is colored by confusion; attention, memory, and orientation are affected in the order named, the latter two, however, usually remaining undisturbed until the disease is well advanced. Paranoiacs pass through a stage of depression which may be relatively short or of many years' duration. At first, the depression is associated with a feeling of physical discomfort—the vague cephalic, cardiac, intestinal, and genital sensations. That is what Regis terms the period of subjective analysis. Later, as the characteristic systematized delusions develop, the paranoiac becomes depressed because of his fancied persecution. This is Regis's stage of delusional explanation. Orientation and memory are perfect, and attention but little disturbed. In simple paranoia the delusions are unaccompanied by hallucinations, while in paranoia hallucinatoria this symptom is added.

In hypochondria, as in the first stage of paranoia, the depression is dependent on the disturbance of the general somatic feeling. Unlike the paranoiac, the hypochondriac does not form insane delusions through introspection, but in seeking an objective cause arrives at faulty conclusions concerning the nature of his condition. Thus a trivial cough becomes a phthisis, and an indigestion, a gastric carcinoma. His ideas, however, are always within the reasonable range of possibility, in other words, conditions which *could* exist.

The neurasthenic's depression is the result of his pathological fatigue. Physical and mental exhaustion produce motor, sensory, and psychic distress, and our patient weeps without apparent emotional cause because he "feels badly." The neurasthenic does not become insane unless there is the additional element of neuropathy. Then there is additional cause for depression in the fears, doubts, imperative impulses, and indecisions.

At one time to think of paresis was to think of delusions of grandeur and an expansive mental condition, but we now know that the mental state of paresis may be one of simple dementia; dementia with exaltation or dementia with depression. Excluding juvenile paresis, this disease occurs in adult life, with an antecedent history of syphilis. No mental disease is so insidious in its onset, and the depressive form in the early stages not infrequently must be distinguished from the melancholia of middle life. This diagnosis is not always easy, even for the trained alienist, but in paresis the depression lacks, if I may so express it, the constancy of the same symptom in melancholia. There is an absence, in paresis, of the regular, wavelike course, the presence sooner or later of evidence of quantitative mental loss; and most important of all, the appearance of the characteristic physical signs. It has

been my experience that the tendon reflexes in depressive paresis are apt to be diminished or lost, although they may be normal or exaggerated. Among other signs, there are pupillary changes, tremors of tongue, lips, and fingers, speech disturbance, and the history of apoplectoid or epileptoid attacks. Laboratory helps are examination of the cerebrospinal fluid and the Wassermann reaction.

While depression is sometimes present in confusion, it is neither constant nor pronounced; and in delirium, fear, not depression, is the dominating emotional state, being induced by the terrifying hallucinations.

In epilepsy there are occasional periods of depression, but these are entirely subordinate to irritability and the loss of self control.

Senile dementia may take a depressive form, but the age of the patient and the quantitative mental loss render the diagnosis easy.

The prognosis and treatment of depression would be that of the special condition or disease of which it is a symptom and would not be within the scope of this brief paper.

1700 Walnut Street.

A LIST OF THE TROPICAL DISEASES OBSERVED IN THE REGION OF SAN FRANCISCO BAY, CALIFORNIA.

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(Published under the Imprimatur of the American Society of Tropical Medicine.)

It is not realized by many that San Francisco Bay is one of the chief guardians of the health of the nation, that California occupies a special position of responsibility to her sister States in the matter of tropical disease. Not only are tropical diseases of many sorts being constantly introduced through the Golden Gate, but it should be remembered that much of California with its equable climate must be classed by the student of the geography of disease as part of the subtropics. There is no winter to break in upon the routine of tropical parasitic infections which may be imported and they are consequently able to become endemic. Malaria, rodent plague, and amœbic dysentery are all three illustrations of this remark. During several months of study and teaching the writer has encountered and had reported to him in the region of San Francisco Bay a number of tropical diseases of which a list is herewith given with brief notes on the various diseases. It will probably be a matter of surprise to some that so long a list of tropical affections are found in any locality in the United States.

Amœbiasis. The attention of the physicians of the State is being daily directed to what is a serious situation, namely, the presence of endemic intestinal amœbiasis in California, especially in San Francisco and Oakland. A number of medical men have taken up the subject somewhat specially so that cases are being reported at rather alarmingly frequent intervals. The writer has seen several cases quite recently, some of which originated in Oakland. One little outburst was instructive as being traceable to the water supply of the victims. The number of cases originating around San Francisco Bay is large enough to justify a conference to discuss the medical and civic aspects of the disease. Dr. John D. Long, of the Marine Hospital Service, has made some valuable observations of the disease as it occurs in California. He found that many of the cases arise in persons who have never been abroad, and suspects that Chinese vegetable gardeners are in many instances to be credited with carrying the disease. Through the kindness of Dr. Dudley Smith, of Oakland, I have had a case of amœbic dysentery under observation for months. This case is remarkable from the large number of atypical ulcers in the rectum. These have largely cleared up under initial enemeta of quinine solution followed by the administration of ipecac, but the disease still persists after several months' treatment. I have also seen several cases of liver abscess supervening on amœbic dysentery, and one interesting case of amœbic appendicitis was brought to my attention by Dr. Long. A peculiar feature of amœbic disease is that, as in some other infections, the products of the prolonged intestinal indigestion are slowly absorbed and produce what may be designated as irritative osteoarthritic exostosis, chiefly on the spinous processes of the vertebræ, and these in turn give rise to stiffness of the back, pains, and even atrophy of different muscles from pressure on the spinal nerves at their point of exit.

Beriberi. Two cases, both in Chinamen from the region of Singapore, seen by me must be classified under this heading. A special investigation taking in all the ships arriving from the far East would doubtless result in the recognition of numerous cases. Both the cases seen were of the dry form of post-beriberic paralysis.

Bubonic plague. I have seen three cases of plague in man and also cases in rats and squirrels. Dr. Colby Rucker, of the Marine Hospital Service, gave me some weeks ago the following data: The wild ground squirrels are infected with plague to the extent of 1.6 per cent. in Contra Costa county. This estimate is based on a series of 20,000 animals. The number infected in Alameda county is over one per cent. Both these counties border on San Francisco Bay. Whenever a focus of infection is found the infected squirrels sometimes number over ninety per cent. of the whole. In one locality (West Hartley) fourteen out of twenty squirrels were infected. The infection has spread as far from San Francisco Bay as Hollister (about one hundred miles). At two places (Lafayette and Walnut) ninety-five per cent. of the squirrels sent in were infected, and the air was polluted with the stench of dying squirrels and the debris left by scavenger animals. The mouths of the deserted burrows were brown with fleas which greedily attacked man. These fleas were chiefly *Hoplopsyllus anomalus.* In Santa Clara county infected squirrels were found as far as fifteen miles below San Jose. San Benito, San Joaquin, Stanislaus, Monterey, Fresno, Merced, and Santa Cruz counties are all involved and the area of known infection now covers 4,000 square miles.

It will be seen from these facts that the residents

of this territory are living on a slumbering volcano. Since Wherry demonstrated plague to be endemic in the wild mammals of the Pacific slope California has taken rank with Yunnan, Manchuria, and East Africa as one of the permanent endemic foci of the disease.

An interesting discovery by the Marine Hospital Service is that the wild wood rat (*Neotoma fuscipes*) is also infected in nature by *Bacillus pestis*. This rodent is an upper and lower Sonoran form and one of its allies is a boreal form extending into the high Sierra. As the infected species is found from Oregon to Lower California, etc., the deserts of Arizona, etc., the discovery is of great interest and importance. The fact that two genera of wild California rodents have been shown to harbor plague suggests the possibility of a general infection of the indigenous small rodents obtaining in the near future.

In Contra Costa county from 1903 to 1908 there were seven cases of rural plague of which six were surely traceable to squirrels, and all three of the cases seen by myself were also due to contact with these animals.[1]

Cochin China diarrhœa. Several cases of this disease have been seen. The free living generation of the strongyloides is easy to recognize in the fæces.

Endemic hæmoptysis. One case, occurring in a Chinaman from Formosa, was seen in which the ova of *Paragonimus Westermanni* were demonstrated in the sputum. A second case of what is almost undoubtedly this infection in a white man has been brought to my notice. The victim in the latter case had resided in Japan.

Filariasis. Several cases of this infection may be reported here. Series of night blood have not yet been taken and it is probable that investigation will show the condition to be not rare. One very interesting case was brought to my notice by Dr. Edward von Adelung, of Oakland. The patient, a Japanese, showed microfilariæ in his night blood, and when first seen was suffering from a severe hæmatochyluria his urine resembling bloody milk. The case was kept under observation by Dr. von Adelung and myself and treated after the method of Wherry and McDill, i. e., exposure to the x rays over the mesentery after profound cinchonization. The hæmatochyluria cleared up like magic, the urine becoming perfectly normal, not even showing a trace of albumin. The embryos, while greatly reduced in numbers, still persist in the blood. The microfilariæ themselves were interesting in that they, while sheathed, showed the locomotile characters described for *M. philippinensis* together with the nocturnal periodicity of *M. Bancrofti*.

Gangosa. I have had the pleasure of seeing this terribly mutilating disease through the kindness of Dr. Simons and Dr. Geiger, of the Naval Hospital at Vallejo. Dr. Geiger has made some valuable and interesting observations regarding its ætiology and treatment. A full discussion of the subject will appear in a future communication by Dr. Geiger and myself.

Intestinal parasites. While not all the parasites about to be mentioned are tropical in origin, yet it has come to seem natural to list animal parasites with tropical diseases.

Ascaris lumbricoides. I have seen several cases. One case occurring in the practice of Dr. Edward von Adelung was an American who had resided in Japan and showed a heavy infection, passing adult worms on treatment.

Dibothriocephalus latus. One case seen, the patient being a Norwegian sailor.

Flagellate protozoa. One instance of heavy intestinal infection with *Lamblia intestinalis* has been found. This parasite is easy to distinguish because of its large peristoma. The only symptom was moderate diarrhœa. In a large percentage of the cases of amœbic dysentery a flagellate organism (probably *Trichomonas intestinalis*) may be seen together with the amœbæ. These monads also occur in the fæces of some healthy persons in California. Pigs in Alameda county frequently harbor a species of infusorian (*balantidium*).

Flukes. Trematode eggs were found in the fæces of a woman from Hawaii. The eggs of what is probably a *diocrocœlium* was once seen in the fæces of a dog in Oakland.

Hookworm. Several cases of this disease have been reported to me. One case was brought to my notice by Dr. E. N. Ewer, of Oakland. Through the kindness of Dr. W. A. Clark I have had the opportunity of keeping an instance of severe infection under careful observation recently at the Alameda County Infirmary. One of the endemic centres of the disease seems to be the Sandwich Islands, and former residents of that territory are constantly introducing the worm into California.[2]

Hymenolepis. One imperfect specimen has been received. I may say that *Dipylidium caninum* is very common among the dogs of Oakland.

Oxyuris vermicularis. Several cases have been seen in children.

Tænia solium. One specimen was sent in, without the head.

Tænia saginata. This worm seems to be common and a number of cases have been observed and specimens from other cases sent in.

Trichocephalus trichiuris. Very common, as a large proportion of those who have been in the Philippines for any length of time become infected. Eggs have been found in the fæces of patients from different parts of the far east. One woman direct from Italy and who had never been abroad before, showed ova in her stools.

Leprosy. During several months' study of a small group of lepers at the Alameda County Infirmary (Oakland) the writer has become much interested in the presence in California of this (to the pathologist) most fascinating of all diseases with the possible exception of syphilis. The invasion by the germ of all the tissues except the muscles coupled with the comparative immunity of the vital organs produces a remarkable disease picture. This was strikingly exemplified in an advanced case which recently came to autopsy by Dr. Martin H. Fischer. I have recently seen a leper on the streets

[1] Since this was written a case of human plague has occurred at Hollister, in Monterey County.

[2] Since this paragraph was written there has been reported to me a case of hookworm in a man who had never been out of California, besides several cases occurring in mines. The eggs and worms were found in these cases, which is of great significance.

of Oakland and Dr. Thomas J. Clark reports having noticed two or three more besides having had two in his private practice and one in his clinic at the Oakland College of Medicine. Dr. Fischer has called my attention to a case occurring within a few miles of San Francisco Bay in a white man who had never been abroad. Nodular, macular, and mixed leprosy have all been seen by me. The State could well consider the establishment of some special means of caring for the not inconsiderable and doubtless increasing number of leprous unfortunates within its borders.

Malaria. While there are many patients with malaria constantly entering California from the Orient, there are also numerous cases originating within the borders of the State. Dr. Eleanor S. Bancroft, of the University of California, has kindly furnished me with a record of the malarial cases treated in the students' dispensary infirmary during the past eighteen months, and these show that over two thirds of the cases originating in the State come from places on the Sacramento river or its tributaries. All the California cases I have seen came from the Sacramento or San Joaquin valley. Humboldt county in the north and Fresno county south have also furnished cases in Dr. Bancroft's experience, while one case seems to have originated in Oakland and another in Berkeley.

All three species of plasmodia have been seen. In my experience cases contracted in the Philippines are usually benign tertian while those from the Sacramento valley are chiefly æstivoautumnal with frequent double infections, the other parasite being benign tertian as a rule. It need hardly be said that no account has been taken of cases which were not recognized microscopically as well as clinically.

Pellagra. This popular disease is not wanting in California. Several instances of suspected pellagra have been shown me. One case, now at the Alameda County Infirmary, is extremely typical, the tongue, digestive symptoms (including regurgitation and the character of the stools), eruption, eye, and mental symptoms all being classical. It is interesting to record that this man, while emaciated, has a comparatively large number of red corpuscles and a good hæmoglobin index.

Schistosomiasis. Dr. Herbert Gunn has published records of a case of this infection in San Francisco. *Schistosomum japonicum* should be continually looked for as it may at any time be introduced.

Skin Diseases. But few observations have been made. Dr. Thomas J. Clark has reported to the writer an interesting case of Dhobie itch in which he demonstrated the causal fungus. The patient was from the Philippines. Dr. Clark also recently showed me a case of ringworm from southern Mexico. The patient stated that the native servants in that country are almost universally affected.

Sprue. Dr. Herbert Gunn has reported three cases to the writer and a fourth case has been referred to me since this article was begun.

The preceding list of affections (the result of a very short period of observation and enquiry) is significant as partially indicating the extent of invasion of our country around its great western port by tropical disease, and constitutes a strong argument for a widespread instruction in tropical medicine in our medical schools. Further investigation will doubtless add to the present list. It may also be pointed out that it is no longer necessary to go abroad for clinical and pathological material to study tropical medicine as few regions can furnish a longer list of tropical diseases than the Pacific slope of the United States. Finally, it may be said that an acquaintance with the methods of recognizing and combating tropical disease has become a practical desideratum even for the medical man who has no intention of practising abroad.

619 Mariposa Avenue.

INNOCENTLY ACQUIRED SYPHILIS.*

By Walter Brooks Brouner, A. B., M. D.,
New York.

The observations on innocently acquired syphilis which I have the honor to present to you this evening, represent the result of fifteen years' special study on a subject which is fraught with so much concern to us personally as teachers and individuals. I have chosen this somewhat trite subject, because I am more and more struck by the frequency with which I have met in the recent past, cases such as I am about to bring to your notice, and because I believe it to be an infliction which may in many instances be avoided. The danger of syphilitic infection is ever present. It is about us even in our most innocent vocations, be they professional or lay.

The gravity of syphilitic infection is one that unfortunately is not generally appreciated by the public. As physicians, we know the large proportion of lunatic, idiotic, paralytic, blind, lame, and degenerate individuals whose unfortunate condition is due solely to syphilis. The sooner the public generally is educated to a knowledge of this disease, its gravity, and how to avoid it, the more we shall have discharged our professional obligations. It is strange that notwithstanding the diffusion of general knowledge in regard to the subject of contagious and infectious diseases and their prevention that there should yet remain such Tellurian darkness on the part of the public to one of the most infectious contagions known to medicine—a disease whose systemic ravages are universal and whose evil effects may be innocently transmitted even to the third generation. While there is a small proportion of the lay public who recognize what this dread blood poison disease means, very few know that it may be acquired *sine peccato.* It is a fact worthy of mention, that those of us who devote our attention to the diagnosis and treatment of such disease, are forced to conclude that syphilis, innocently acquired and otherwise, is undoubtedly on the increase, if we may judge by the largely increasing number of cases that one meets, not only in hospital but in private practice. This increase is all the more alarming because innocent victims of infection are numbered alas! too often among our private patients.

The following cases selected from my hospital

*Read at the West Side Clinical Society of New York, February 10, 1910.

and my private practice will illustrate the points which I wish to call to your attention:

Case I. Miss C.; age thirty-one, single, housekeeper, good personal and family history, was referred to me for diagnosis. A complete examination when the patient disrobed revealed the presence of a diffuse, well distributed roseola. There was a general adenopathy but with no demonstrable body lesion, nor was there the history of a cut or an abrasion on any part of the body. It was not until the mouth was examined that the original site of infection was discovered. I then noticed that the glands of the neck were large and painful, the tonsils markedly infiltrated. It was only when I had the patient evert her upper lip that I discovered the original site of infection—a fullblown, hard, typically indurated chancre, which had eaten into the bony cancellous tissue as well as the soft tissues of the gums. Mucous patches covered the under surface of the upper lip and a copious serous discharge bathed the sore to such an extent as to suggest incipient salivation, although no mercurial had been taken. Upon further inquiry I learned that eight or nine weeks previously she had had a dentist remove the stump of a broken incisor tooth which had been difficult for the dentist to grasp and remove.

This was undoubtedly an infection due to an ignorant or a careless dentist. Now let me ask you gentlemen here to-night, how many dentists known personally to you, put into practice the ordinary rules of our asepsis and sterilization in the care and use of their dental instruments? The interest of this case lies not only in its innocent origin but in the fact that here was a walking cesspool of infection living in a refined family, rendering all those with whom she came intimately in contact liable to be infected by drinking from a common cup or by using the ordinary eating utensils such as knives, forks, or spoons, and by handling the same towel, etc.

Case II. F. L.; age twenty-six, a lady's maid, of good appearance, attractive, employed to look after the lady of the house and her three small children. She had on examination a fullblown body roseola, with a number of mucous patches on the lips. She denied unlawful congress, but admitted accepting without limit the amorous kisses of a male friend who, she recalled, had a cracked slit or sore in the left corner of his mouth.

The interesting feature of this case was that before the rash had come out on her face necessitating the relinquishment of her position as housemaid, she had regularly put to bed the three small children under her care and had always kissed them good night. Judged from such a case, is it fanciful or far fetched to suggest, that all household help coming into intimate contact with the family, should be required to present a certificate from a reliable physician prior to being engaged in a domestic capacity? This is not a far fetched situation, as I am told it is a practice which obtains in the South, where domestics who come in close contact with the family are compelled first to submit to a thorough examination on the part of the family doctor. Of course it is needless for me to suggest that this careful examination should always take place when one is seeking a wet nurse, and in like manner no baby should be given to an innocent wet nurse without the baby's history likewise being thoroughly gone into, as cases have been recorded where the suckling infant has been the cause of infecting the temporary mother, and *vice versa.*

Case III. J. K., thirty-five, married, living with his wife and four children, came under my care a short time ago at the New York Hospital. He consulted me for a slowly healing "fever sore" on his upper lip. He denied promiscuous affiliation, nor had he kissed or been kissed outside of his family circle. His was a typical case of syphilis. Careful questioning revealed the only possible source of infection to be a drinking cup in the railroad station in and about which he was employed.

Now the danger of drinking from a common and public cup cannot be overestimated. It is ever present, whether it be a communion cup, sipped from while at devotional exercises or any ordinary drinking cup used in hotel corridors, railway stations, street corners, theatres, or places of public assembly such as clinics, etc. Those of us who are familiar with the practice which obtains at the communion table should protest against the use of a "common cup." Though Biblical it is extremely unsanitary. As indicated, syphilis is a disease which may be innocently acquired and innocently transmitted. Why then should not we as medical men protest against the use of any drinking vessel in common use even though it be a communion cup? The specimens of individual communion cups which I now present to you solve the problem of providing each communicant with a cup. Equally reprehensible is the practice which obtains at fashionable theatres. It has always spoiled my evening at a theatre to see the large number of apparently refined people, who between the acts of a play, drink water that is passed around by a small boy in buttons who cries "Water, water!" Of course the first one served is not as likely to be infected as those who come in for the second round of drinks, for, being pressed for time the boy in buttons usually goes to the water tap and refills the partially emptied glasses without attempting to rinse them out. I can assure you that my tongue could hang down to my shoe tops before I would assuage my thirst from one of those theatrical germ incubators. This practice of passing around drinking cups in public assemblies should be prohibited by local boards of health or else regulated under proper sanitary provisions. It seems incredible that even our hospitals and dispensaries should be arch offenders in the matter of providing drinking water for their select clientèle. I have seen my syphilitic patients drink out of the dispensary cup (despite my labored caution as to the use of an individual cup) only to be followed by patients who have tuberculosis, cancer, etc. As for me I should as soon take my chances with the Hindu drinking the polluted waters of the "sacred Ganges" as to take my chances of drinking from one of those dispensary cups. In short, it is my honest opinion that the placing of public drinking cups in railway cars, ferry houses, and public places of assembly should be absolutely prohibited. They are relics of a mediæval barbaric past.

Case IV. The next case is a sad one, involving the ruin of an estimable young girl, an active church worker, who worked side by side in an office with a bookkeeper who had syphilis. The story is short. She had a fullblown chancre on her lip by accidentally sticking into her lip a sharp pointed lead pencil which the bookkeeper beside her had used. Some days after the appearance of the sore on her lip she recalled the fact that her lip had bled when she accidentally stuck the point of the pencil into her lip while trying to moisten its tip in her mouth. She ran the usual course of such cases.

The interesting thing here is that a diagnosis was

not made for some time, and she too was drinking from a common cup and was not isolated from her family. Right here I may say that it is no crime for us to suspect syphilis in any one, no matter what the station in life of our patient may be, for there can be no doubt that many respectable people acquire syphilis innocently. It is a disease which is not a respecter of persons, and may be equally seen in the palace and in an hovel.

Case V. The next case is that of a female, married, age twenty-one, who presented herself at my office for diagnosis. She noticed a rash and knowing that her theatrical friend who lived with her had had a similar rash she became suspicious. Careful examination revealed a fullblown roseola with the usual glandular enlargement. There was no history of any illegitimate origin. Her story was straight and seemingly true, yet I was unable despite a most rigid examination to locate the site of the original infection. After I had about given up my search I observed a small piece of court plaster of about the size of a three cent piece over the proximal phalanx of her right index finger. Upon inquiry the patient stated that it was nothing only a little ordinary sore which was slow in healing and which she had had for some time, although it was much smaller than formerly. As she said, it was simply a cut. I removed the sticking plaster only to find a hard, small, typical, almost healed over chancre.

The origin of this sore was interesting. Her theatrical friend, a former schoolmate, was stopping with my patient temporarily. She confided to my patient that her doctor had told her she had a loathsome blood disease and must be careful. Notwithstanding all caution my patient was infected by receiving a cut on her index finger from the broken edge of a tumbler in which her theatrical friend kept her toothbrush.

Case VI. P. J., age twenty-three, presented himself at the Vanderbilt Clinic for diagnosis and treatment. I found that at the angle of the left lower jaw he had a hard, indolent ulcer of the size of a hazelnut, which was characteristic of a syphilitic infection. His story was short and pointed. Some weeks previously a barber while shaving him had cut the side of his cheek superficially. Nevertheless there was quite a flow of blood, so the barber applied a caustic stick on the cut to stop the flow of blood.

This case illustrates the possibility of infection from a careless barber and it also emphasizes the necessity for us as physicians to educate the public to the possibilities of innocent infection. Nothwithstanding the fact that some boards of health now insist upon barbers doing away with the caustic stick, careful observation will show that the rule is more honored in the breach than in the observance. There can be no doubt that barber shops should be as carefully regulated on an inspectorial basis as bathing establishments and lodging houses are.

Case VII. A physician presented a fullblown roseola, following an index finger hangnail infection.

Such cases, alas! are very common and are all the more to be regretted inasmuch as they are avoidable. It seems incredible that an intelligent physician should carelessly subject himself to an unnecessary risk in examining a patient. Personally, I always approach my patients in a most respectful manner. I do not even examine the mouth without protecting my fingers by properly applied rubber finger cots. How much more careful, then, ought we to be in making the more intimate examinations, especially such as gynæcologists are called upon daily to make. My personal habit is always to carry in my pocket, in a small metal receptacle, a number of these little rubber finger cots. They are not bulky, are inexpensive, and should be destroyed by burning. Right here it might be well to enter a word of protest against the indiscriminate handling of patients by doctors. I have often stood aghast at the temerity of my associates in handling the various parts of the body without protecting the fingers. All internes in hospital practice, all clinical assistants, should be taught how to work around patients with a minimum amount of personal contact.

Case VIII. Miss E. C., age twenty-seven, a tobacco stripper, was seen by me at the New York Ophthalmic and Aural Institute through the courtesy of Dr. Arnold Knapp. She denied any known infection or known cause for infection; nevertheless she had a typical syphilitic iritis which required very active treatment. There can be no doubt that this patient told the truth, and it is more than probable that in some way she infected herself at her work unconsciously.

This eye case is interesting because it is one of several such innocently acquired syphilitic infections seen by me where iritis, optic neuritis, neuroretinitis, chorioretinitis, have been diagnosticated as of syphilitic origin, have been proved to be syphilitic both by a confirmatory Wassermann-Noguchi blood examination and by a prompt response to proper antisyphilitic treatment. It is well here to recall that some patients go through a mild primary and secondary stage of syphilis unconscious of its presence.

Case IX. An Italian boy, fourteen years old, presented himself at the Vanderbilt Clinic with a well marked syphilitic rash and a general adenopathy. Careful examination failed to reveal the site of infection until the anal region was examined. Upon close questioning, he admitted having been the victim of a Chinese pæderast, who, with a few coppers, had lured him into the back room of his laundry and accomplished the boy's ruin.

Case X. A lad, seventeen years old, homeless, appeared at the New York Hospital for treatment suffering from a neglected tubercular syphilide. He denied unlawful willing congress, but told of having been the victim of a pæderastic hobo, who had forcibly assaulted him while "beating his way" on a freight train from Buffalo to New York.

These two cases are interesting and instructive because they are unique and emphasize the dangers which even youthful males run in our so called civilized communities. Parents should be warned by us of the possible dangers which even boys may run. Young male children should never enter unaccompanied, public lavatories in ferry houses or railway terminal stations, because of the possible danger of defilement. Police records show that these places are often the haunts of diseased degenerates. Finally, these two cases (IX and X) demonstrate the importance to us, as physicians, of making minute and thorough examinations of all patients who present themselves for diagnosis and treatment.

Right here it may be well to state my personal belief, which is that many of these innocently acquired cases of syphilis are overlooked, because of the failure of medical men to take proper histories of their cases, and because of failure properly to examine a patient. My personal practice is to insist upon a thorough examination from head to foot. This practically means that every square inch of the patient's anatomy is carefully gone over so that no part, however small, may be overlooked. Case V illustrates the necessity for a most thorough and complete examination. I regret that the limits of my paper do not permit of extended remarks on the

treatment of this dread disease. Suffice it to say that after many years of experience, I am firmly convinced that the method, *par excellence*, of treatment, is intramuscular injections of salicylate of mercury in properly regulated doses. Did time permit, I could narrate many more such cases which have come under my care in private as well as institutional work, all of which were infections of undoubtedly innocent origin.

Conclusions: From the foregoing, I, in conclusion, wish to make the following deductions:

1. That syphilis, one of the most contagious infections afflicting mankind, is undoubtedly on the increase as judged by hospital and private practice.

2. That there is woeful ignorance on the part of the public both as regards its origin, its frequency, and its communicability.

3. That many estimable, respectable people acquire this disease innocently and for a long time are unaware of the real nature of their illness.

4. That these innocent victims innocently infect others.

5. That the most frequent source of infection is by using public drinking cups, public towels in bathrooms, and improperly washed cooking utensils, etc.

6. That the use of the common communion cup in public worship should rapidly be done away with and individual communion cups substituted therefor.

7. That the practice of passing around drinking water in public places of amusement should be prohibited by local boards of health because of the danger of infection that lurks in these drinking cups.

8. That hospitals, dispensaries, and public buildings should not be provided with public drinking cups, but that individual paper cups should be provided.

9. That the public should be instructed as to what to demand from their dentists in the way of aseptic instruments. It is, alas! too common a practice for dentists not to pay any attention to the advances made in our knowledge of asepsis.

10. That medical men should ever be on the alert to diagnosticate *lues*, or syphilis, when present, ever mindful that it is a disease common alike to the prince and the pauper.

27 West Ninth Street.

Effects of Tropical Conditions on Blonds and Brunets.—An investigation has been started which is to last a year, with a view to proving or disproving the theory that the actinic rays of the sun produced more marked and injurious effects on blonds than they do on brunets. A printed card has been prepared which is to be sent to newly arrived commands where equal numbers of decided blonds and decided brunets will be placed under observation for a year, the results recorded on the blanks. It is planned also to determine the number of the two types of complexion found among the patients at the Division Hospital and among soldiers invalided home and compare the percentage of these types among the sick with the percentages of the same types found among a large representative body of soldiers selected from several posts.—*Military Surgeon*, August, 1910.

Our Readers' Discussions.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

C.—How do you treat œdema of the lungs? (Closed July 15, 1910.)

CI.—How do you treat chronic nasal catarrh? (Answers due not later than August 15, 1910.)

CII.—How do you treat other electric shocks than that of lightning? (Answers due not later than September 15, 1910.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED*) that the answers be short; if practicable no one answer to contain more than six hundred words.*

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the Journal. Our readers are asked to suggest topics for discussion.

The prize of $25 for the best essay submitted in answer to question XCIX was awarded to Dr. Louis J. Spivak, of Philadelphia, whose article appeared on page 220.

PRIZE QUESTION XCIX.

THE TREATMENT OF GONORRHŒA IN THE MALE.

(*Continued from Page 271.*)

Dr. W. J. Probst, of Pittsburgh, Pa., states:

When a patient presents himself for treatment, I find myself getting valuable data by mere outward appearances, as to physical condition, personal cleanliness, character, and personality. At the first consultation it is my custom, to subject the unfortunate to the following grill of questions, to all of which I insist upon a definite answer: Age; occupation; alcohol used to what extent; previous attacks of gonorrhœa; date of last intercourse; time intervening, before appearance of discharge; quantity of discharge and when most profuse; color and consistency of discharge; previous treatment, if any; inconveniences suffered since occurrence of trouble.

From these questions, definite conclusions can nearly always be arrived at, as to the location and severity of the infection. I now prepare a slide, to remove all doubt as to the possibility of a nonspecific urethritis. The two glass test is next in order to confirm my previously formed opinion as to the location of the infection, anterior, posterior, prostatic involvement or perhaps a specific cystitis.

Anterior urethritis: I have a rubber apron, with a hole cut in, sufficiently large to admit the free passage of the penis. After the patient removes his trousers, I place an ordinary chair within reach of an irrigator, capacity one gallon. The patient is requested to urinate before starting irrigation. He then puts on the apron and sits toward the edge of the chair with the bottom of the apron hanging in a white enameled, large sized dishpan on the floor. The irrigator is now filled with warm water into which fifteen grains of potassium permanganate have been dissolved. I elevate the irrigator about

three feet above the seat of the chair, give the patient the irrigator tip with tube attached. I instruct the patient to hold the tip in sufficiently tight to allow a steady inflow and outflow of the solution. After a pint of the solution has been thus run in, the urethra is thoroughly washed out. I then elevate the irrigator about three feet higher, adding from five to ten grains more of potassium permanganate, and allow the remaining solution to flow in, at the same time instructing the patient to insert the tip a little further.

I now use a freshly prepared solution of a compound of silver nitrate and gelatose, called albargin (one pint of a one half per cent. solution and containing about one half ounce glycerin). This is put in the irrigator and patient is instructed to allow it to run in slowly. At times I substitute solution of nitric acid, from forty to sixty grains to the quart of water, instead of the permanganate.

Instruction as to diet. Moderate amount of meat, once a day, coffee or tea once daily, milk or buttermilk as much as desired, at least eight glasses of water daily. The patient is told of antisepsis, in particular of bath room antisepsis and the avoidance of inoculating the eye. Minimum amount of exertion.

Internally I give

℞ Methylene blue, ...gr. iss;
Salol, ...gr. v;
Balsam of copaiba or santal oil, ...gr. viii.
M. This, in a capsule, to be taken three times daily, after meals.

To this may be added extract of belladonna or extract of hyocyamus, in case of painful and frequent urination.

The patient is instructed to return the next day when the same irrigations are used, making the permanganate solution a little stronger. The discharge rarely appears the next day. The patient is instructed to return every other day for a week, then after five days, then after seven days. The patient is then given a prescription.

℞ Boric acid, ...
Salol, ... āā grs. iv.
Hexamethylenamine, ...
M.

Instructions are given to take this for two weeks, at the end of this time if there is no recurrence of discharge the patient is usually cured.

Urethritis, prostatic involvement or gonorrhœal cystitis. In these cases it is impossible to follow any definite routine treatment.

In the medical treatment of all posterior urethral infections, hexamethylenamine is the drug upon which I mostly rely.

℞ Methylene blue, ...gr. iss;
Hexamethylenamine, ...
Salol, ... āā grs. v.
M.

In cystitis I always add extract of hyocyamus and belladonna. Hexamethylemamine acting much more pronouncedly in alkaline urine, I employ at the same time a prescription as follows:

℞ Ammonium benzoate, ...grs. xx;
Fluid extract of buchu, ...5iv.
M. S. To be taken in half glass of water morning and evening.

This is not a very agreeable mixture, but very efficient.

In prostatic involvement I request patient to report for treatment every other day, at which time I massage the gland in the usual manner. After this the anterior urethra is washed out same as in anterior urethritis, with a solution of potassium permanganate. I then take a soft rubber catheter and insert it into the urethra to a point just beyond the shutoff muscle and allow a solution of potassium permanganate (five grains to the quart) to enter slowly until the bladder is full. In order to permit this to run out, it is necessary to push the catheter in a little further. I then repeat the same process, but instead of allowing the solution to flow out through the catheter, I withdraw the catheter and ask patient to retain solution for a few minutes then urinate. Following this, I draw about thirty grammes of the compound of silver nitrate and gelatose into a syringe, insert the tip into the urethra, grasp the head of the penis firmly, instruct the patient to strain as if in the act of urinating and gently but firmly force the solution back.

From time to time I prepare a slide and search for the presence of gonococci. After the prostate is massaged the second time, I usually find the prostatic discharge quite transparent and pyogenic organisms usually absent.

The stock vaccine treatment of specific urethral infections must not be omitted to be mentioned, but I only employ this in extreme cases.

There is a remarkable difference in the ease with which some cases yield to treatment and the persistency of others, which is due chiefly to the virulency of the organism and the resistance of the patient. To this must be added, that much depends on the patient.

Dr. J. C. Copeland, of Los Angeles, California, says:

In the treatment of gonorrhœa, the most common and the most venereal of all venereal diseases, the chief end to be attained is the speedy and complete destruction of the gonococci. In our efforts to annihilate the gonococci, however, we must remember that we have to deal with a very severe inflammation of a delicate and highly sensitive mucous membrane, and that harsh treatment may result in damage to the patient's urethra and contiguous structures.

After a diagnosis has been made by finding gonococci present in the discharge, it is my invariable custom to have a ten minutes' heart to heart talk with the patient, explaining to him, in language he can readily understand, the serious nature of his ailment, and the imperative necessity of faithfully following every direction given. My conversation is about as follows: "Sir, I am sorry to inform you that you are suffering from an acute venereal disease, a specific inflammation of the mucous lining of the urinary channel, due to the action of a specific germ,—the gonococcus of Neisser. This gonococcus gained entrance into the meatus or lips of the penis during connection, and after a period of incubation of from three to seven days, has set up a severe inflammation with a discharge of pus. Beginning at the meatus or lips, this inflammation is gradually extending back into the deep or posterior urethra or channel, and unless promptly checked by

suitable treatment may give rise to painful and dangerous complications. The discharge from the penis is highly contagious if brought in contact with a mucous surface. If the eye becomes infected a severe inflammation is set up which may destroy the sight in a short time. Therefore you must exercise great care in keeping the parts absolutely clean, and in preventing contamination of water closets, baths, towels, etc."

After passing water in two glasses, the glans penis is cleansed with a bichloride solution, and the patient instructed to lie flat on the table. With a quarter ounce, hard rubber, blunt pointed urethral syringe two drachms of a freshly prepared solution of one of the organic silver compounds is slowly injected into the urethra and held there for fifteen minutes by pressing the lips of the meatus. If the bladder has been emptied, as it ought to be in every case before using the injection, there is seldom any need to have the patient make pressure at the junction of the anterior and posterior urethra to keep the fluid from passing backward. The patient is instructed to use this injection at home, four times a day, taking pains to see that the bladder is emptied first, and that the solution is injected slowly and gently and held in the urethra for fifteen minutes.

He is further instructed to cut out all intoxicants, to adopt a milk diet, keep the bowels well open, drink an abundance of drinking water and keep as quiet as possible. A snug fitting suspensory, or a jockstrap, is applied to lift the testicles well up toward the abdomen, and the patient is told to report at the office every day and if possible avoid urinating for a couple of hours before coming, so that the urine may be examined in two glasses.

If seen during the first five or six days the urine glass test will show that the infection is limited to the anterior urethra, the first glass being cloudy and full of shreds, and the second glass clear. This line of treatment is strictly carried out for two weeks, although microscopical examination of the discharge will probably not reveal any gonococci after the second or third day of treatment.

During the second two weeks of treatment, a stronger solution of the organic silver compound is injected three times a day at home, and at the office the same solution, or a one quarter solution of silver nitrate. The latter solution favors desquammation, and will dislodge gonococci that have burrowed and become concealed in the deeper layers of the mucous surface. At the end of this second period of treatment, if no gonococci are present in the discharge, the hand injections at home are discontinued, but the patient is still required to report at the office daily for examination of his urine and the injection of the silver preparation. It is just at this stage that the average patient, encouraged by the abatement of all acute symptoms and the continued absence of the gonococci is apt to become careless, and by dietary indiscretions, or indulgence in alcohol or venery, suffer a relapse.

And it is not uncommon to have a patient who has been doing nicely and whose infection has been entirely anterior, present himself for treatment with posterior involvement, indicated by the two glass test, prostatic congestion and swelling, and vesical tenesmus. Prostatic massage every second or third day, and instillations daily of one drachm of a one quarter per cent. silver nitrate solution are now indicated. If this does not clear up the second glass of urine, and stop the vesical tenesmus with frequent urination, especially at night, the bladder may be irrigated with a silver nitrate 1 in 50,000, every day for a few days.

Both the first and second glasses of urine having cleared up and no discharge or sticking of the lips being present, a final microscopical examination of the substance expressed into the urethra by massage of the prostate and seminal vesicles and stripped into the meatus is made, and if no gonococci are present we may safely assume that the patient is cured. Before discharging the patient, however, it is a safe rule to practice gradual dilation for a few days, beginning with a No. 20 and running up to No. 27 French, passing a sound every second or third day. If the beer test does not produce any recurrence of symptoms we can now safely pronounce the patient cured.

I have intentionally omitted discussing any of the complications, such as paraphimosis, periurethral abscess, adenitis, prostatitis, epidymitis, epididymo-orchitis, etc., for the sake of brevity.

SUMMARY.

Careful local treatment, combined with rest and regulation of diet, faithful supervision of the patient for a period of from six to eight weeks during which time frequent microscopical examinations are made and the Thompson two glass test is made daily, are essentials. Astringents and irrigations should not be used uring the first thirty days. Internal medication is of little value. When posterior involvement occurs, instillations of one quarter per cent. silver nitrate with prostatic massage every third day are indicated.

Dr. Edward H. Marsh, of Brooklyn, N. Y., remarks:

I shall confine myself to the discussion of gonorrhœal urethritis and exclude all complications, local and general.

The treatment varies with parts involved and with the acuteness of the disease. Therefore I shall divide the subject into acute and chronic, anterior and posterior inflammations.

In acute anterior urethritis of gonorrhœal origin the symptoms are scalding during urination, most frequently felt in the distal portion of the urethra, and discharge; painful erections occur in about twenty per cent. of the cases. When the urine is passed into two glasses, the first is cloudy, the second clear. Internal treatment is symptomatic, local treatment imperative.

The patient should drink large quantities of water. He should avoid alcohol and all highly seasoned foods. The bowels should be kept open by daily doses of magnesium sulphate if necessary. The diet needs no interference as a rule. For the scalding I give the following:

℞ Tincture of hyoscyamus, }
Potassium acetate, ... } .....āā ℥ss;
Water, ...q. s. ad ℥iii

M. et Sig.: One or two teaspoonfuls in a glass of water every four hours.

For painful erections sodium or strontium bromide in half drachm doses just before retiring usu-

ally proves sufficient. If they do occur the penis is to be immersed in cold water until the erection subsides.

The local treatment has for its object the destruction of the gonococcus; silver is most active in this respect. But as congestion must not be increased the pharmaceutical field is narrowed to the nonirritating salts of silver. The patient urinates, then lies down, and receives an injection of one of the preparations.

The injection is made with a two drachm conical pointed glass syringe. Force should never be used, but, on the contrary, the injection is to be made with the greatest gentleness. The amount of injection is regulated by the degree of distention felt by the patient. This should not be more than that felt during urination. The injection is held in for ten minutes, by pinching the meatus between thumb and forefinger. At the expiration of ten minutes the patient assumes the upright position and allows the fluid to escape. The injections are to be repeated three times daily by the patient (in this instance in a sitting posture), he should be seen and examined at least every other day by the physician, so that any complication may receive immediate attention. The strength of the solution is increased as the acute symptoms subside.

If the inflammation has already extended to the posterior urethra or if it does so, it is shown by cloudiness in the second glass of urine. This condition is invariably attended by a greater or less degree of involvement of the prostate. The symptoms are frequency of urination (especially nocturnal) urgency, lack of control, and tenesmus. With a very acute condition local treatment should be limited to the anterior urethra. Internally the same mixture as above and in addition aconite, either tincture or extract, to the point of toleration, will relieve the symptoms very quickly. So soon as the symptoms have subsided local treatment is begun. This consists in massage of the prostate (always in a direction toward the apex) and in local applications of one of the organic silver compounds. The massage is performed before the patient urinates, and then by this act all the prostatic fluid and pus is washed out of the urethra. The solution should be instilled by means of the Keyes-Ultzmann syringe. These measures should be carried out three times a week, meanwhile the anterior urethra being treated as described.

Usually in from ten days to three weeks the urine will become clear, but will contain shreds; the discharge is decreased and its character is mucus rather than purulent and may appear solely as a morning drop. This signifies a chronic urethritis. Cold steel sounds are to be passed every four days and held in place for at least ten minutes. If the meatus measures less than No. 24 French, a meatotomy is to be performed, the meatus being cut to at least No. 30 French. Local applications of silver nitrate are now used, the strength of the solution varying from 1 in 4,000 to one per cent. The weaker solutions may be injected by means of a hand syringe, but solutions of 1 in 1,000 or stronger are to be instilled with a Keyes-Ultzmann springe or a Guyon syringe and catheter. Such instillations or injections are to be made every second day. The anterior endoscope of the Chetwood type is very valuable at this time. By means of this instrument, small areas of local infection and infiltration are to be found and touched with strong solutions of silver nitrate (five or ten per cent.) by means of long cotton wound applicators; this to be repeated as required in the individual case.

In chronic posterior urethritis, the treatment consists in prostatic massage every four days, followed by instillation of a few drops of a solution of one of the organic silver compounds. On the alternate days when massage is not performed, cold steel sounds are passed and left in place for ten minutes.

I carry out these treatments until I can pronounce the patient cured. My criterion of cure is as follows: When after holding his urine for twelve hours the patient shows neither discharge at the meatus nor shreds in the urine, and when three consecutive microscopical examinations at weekly intervals of the prostatic secretion and contents of the urethra are negative.

Dr. August G. Maron, of Brooklyn, New York, observes:

Acute gonorrhœa is a contraindication to the use of instruments, either for diagnostic purposes or for treatment. We must mainly depend on the microscopical examination of the secretion and on the various diagnostic glass tests.

There is no one way of treating gonorrhœa which can be termed the best method of treatment, because the success of any method depends in a large degree on the skill and experience of the physician and the willingness of the patient to follow out instructions.

In the first place, advice as to the care of eyes and avoidance of carrying contagion to others. Bland diet, no alcohol and no venery, direct or indirect. Rest is the one most important remedy, and if able to be carried out for one or two weeks the entire course will be improved and thus avoid complications and prolonged treatment.

Internal remedies: The urine should be kept bland and sterile, and to impart to it qualities which will have a healing effect when passing over the inflamed urethral membrane. Hexamethylenamine, 7½ grains, twice a day, will answer for the first purpose, while the balsams will act for the latter. Oil of sandalwood, combined with fluid extract of kava kava, ten and five minims, three times a day, will lessen painful subjective symptoms and diminishes amount of discharge; produces slight local anæsthesia and is mildly astringent in a faintly acid medium. If urination is painful and frequent, same can be reduced by hot hip baths or hot applications to penis, or the patient may use

℞ Extract of hyoscyamus, ..
Extract of cannabis indica, } .....āā grs. v;
Sugar, ...q. s. ad 3i.
M. et fnt. chart No. x.
S. Three or four a day.

In presence of intense lymphatic involvement with a great degree of sensitiveness no local treatment should be used; may use mixture of potassium acetate and tincture of hyoscyamus for painful micturition and the bromides to combat erections.

Acute condition having subsided, we may begin

local treatment. Instruct patient how to use hand syringe for injections, being cautioned not to use force and not more than half ounce of fluid. One of the organic silver compounds or gelatose silver is used, for they are gonococcidal and unirritating. They should be used two to three times a day and retained in urethra from five to ten minutes. Most useful local measure is the daily irrigations of the urethra with solution of one of the albuminous silver salts. Irrigations should be made by physician only, using large hand syringe or irrigator; by this means the urethra is thoroughly cleansed of accumulated secretions, its folds being distended and flushed with the solution, thus lessening the liability of the glands and crypts becoming chronically infested with gonococci.

When the microscope reveals absence of gonococci, astringent remedies are to be used; of these we have potassium permanganate from 1 in 5,000 to 1 in 500; zinc sulphate, from 1 in 200 to 1 in 50; silver nitrate, alone or combined with resorcin or alum, are all useful and may be used at intervals regulated according to the reaction they cause.

With such a treatment I think a patient may be cured in from six to eight weeks. Upon examining urine, as long as any shreds persist, whether with gonococci or pus, the case should not be dismissed. Provided there is no prostatic involvement the use of the endoscope will show a submucous urethral infiltrate, which, in the absence of any excessive urethral sensitiveness, should be treated with sounds and dilatations. Begin with a No. 26 French up to No. 30 French and then commence anterior dilatations. This should be done every four to seven days, and each time followed by a copious irrigation. Having done this for about six weeks, intermit instrumentation for a month, and should the urine still show shreds, the treatment should be renewed.

(*To be concluded.*)

Correspondence.

LETTER FROM LONDON.

The Meeting of the British Medical Association.—The Holiday Huddle.

London, *July 27, 1910.*

The important medical event of this week is the meeting of the British Medical Association in London. The customary provincial meetings every year undoubtedly have a considerable influence on medical thought, but this influence is all the greater when the annual congress is held in the metropolis, owing to the fact that the gathering is then an exceptionally large one, while at the same time a metropolitan meeting is necessarily in closest touch with the leaders of the medical profession and with those hospitals and laboratories which are the main centres of medical thought and investigation in this country.

It is just fifteen years since a similar medical congress was held in London, and in the time that has elapsed far reaching changes have occurred and advances been made in the world of medical and surgical science. At the same time the British Medical Association has itself advanced to the strong and representative position which it holds to-day, where it can truly profess to voice the sentiments and opinions of the medical profession in this country.

The proceedings in connection with the induction of the new president took place at the Guildhall yesterday. Sir William Whitla. M. D., the retiring president, who occupied the chair at the outset, said it only devolved upon him to ring up the curtain and throw his mantle upon the shoulders of the great man they had chosen as their president. Mr. Butlin's name was writ large and imperishable in the annals of surgery. He was known by his contributions to medical science in every region of the medical world and combined the highest scientific accomplishments with a profound knowledge of men, business capacity, and an intimate acquaintance with the details of the working of their organization.

Mr. Henry T. Butlin, F. R. C. S., then took the president's chair and briefly thanked the meeting for electing him. Sir William Whitla was elected a vice-president of the association for life and accorded a hearty vote of thanks for his work during the past year. Dr. Edwin Rayner, of Stockport, was re-elected treasurer. It was decided to accept the invitation of the Birmingham Branch to hold the annual meeting in Birmingham in 1911, and Professor Robert Saundby, M. D., was chosen as president elect. The financial statement for the year ending December 31, 1909, showed an excess of assets over liabilities of £104,199 and an excess of income over expenditure of £732.

In the evening there was a large gathering at St. James's Hall, Great Portland Street, W., to hear Mr. Butlin deliver his presidential address, members wearing academic robes. At the commencement of the proceedings the president announced amid loud cheers that the King had signified his willingness to be patron of the British Medical Association. In the cause of his address the president said that from its very foundation the association had shown great interest in matters in which the public or the state and the profession were involved. In the first half dozen years it had appointed committees to consider vaccination, poor law medical relief, the suppression of quackery, the sale of arsenic, and other matters, and there was no reason to doubt the existence of that "zeal and alacrity" on the part of the members which had been recommended by Dr. Hastings in his first address at Worcester. In order to understand fully the term "medical reform," he must take them back to the early years of last century, when a man might practise every branch of medicine or surgery on a qualification obtained by a single examination in either surgery or medicine, to the time of Bob Sawyer and Ben Allen, when the examinations of the various qualifying bodies in Great Britain and Ireland varied remarkably in severity and there was no central authority which could influence them to alter the terms of their examinations, when there was no registration of qualifications, and it was difficult for the public or even the profession to discover what men were qualified and what men were practising without a qualification. He went on to describe in detail the advance of the association from 1834, when the condition of affairs was so unsatisfactory

that a Royal Commission was appointed "to inquire into and consider the laws, regulations, and usages regarding the education and practice of the various branches of the medical profession in the United Kingdom," to 1886, when the Medical Reform Committee urged the importance of reform so firmly on the government that a measure was passed through the House of Lords by the Lord President of the Council and through the Commons by Sir Lyon Playfair and became the medical act of 1886. It provided for direct representation of the profession on the General Medical Council, and that a legal qualification to practise should only be obtained by those persons who had passed an examination in medicine, surgery, and midwifery. As to the future, what was the great society to do with its 22,000 members, its numerous divisions and seventy branches, and its large revenues? Since its reconstitution, eight years ago, it had devoted its attention very largely to the defense of its members and the profession generally against the attempts which were made with cruel frequency upon them by many sections of the community. While extolling the nobility and generosity of the medical profession as a whole, it was notorious that public and private bodies, municipalities, corporations, clubs, medical aid institutions, and charities vied with each other in their attempts to use their services without award or for the smallest compensation which was possible, and it was equally clear that the only chance which the rank and file of the profession—those men who performed the most and the best of the work—had to repel those attacks was in the support of a great and powerful body like the association. Medical men talked of those things as if they belonged only to modern times, as if until recently they had been fairly treated and no attempt had been made to impose on their good nature. Years ago, during the time that he took an active part in the work of the association, they made attempts from time to time to assist medical men in repelling these attacks with more or less success. Now the association was dealing with that part of its work with greater vigor and with the intention to do its best to help the oppressed members of the profession. And as a result he believed in these last years the body of the profession looked with greater hope and confidence upon the future than they had ever done within his recollection. That side of the work had his hearty wish for its success. His mind was frequently saddened by the hard cases of some of those practitioners whom he had known as well as educated, industrious, and intelligent, and who had been cruelly ill treated by public bodies and societies. But he was afraid there was no side of their work which needed more delicate handling or greater tact than this. An expression of undue force on the one hand, an exhibition of weakness on the other, and the amount of mischief which might follow was incalculable. He could not remember any period of their history when their affairs required more skill and sagacity than the present.

The *Lancet* of this week contains a very interesting article headed The Holiday Huddle. The writer raises a protest against the habit of most people of taking their holiday about the same period (generally in the month of August). This results in a great number of inconveniences. Accommodation at the seaside is expensive, hard to get, and crowded, and the railway companies are at their wits' end to cope with the sudden demand upon them. Families have to put up with inconveniences and cruelties because they are all forced to go away at the same time. It is also absurd that the proprietors of hotels, apartments, and so forth, are not able to enjoy a larger patronage than that which some two months afford, and in short it would be to the general advantage of all concerned if the holiday were not made such an intensely concentrated occasion.

As a remedy the writer suggests a three months' holiday in the summer from the schools, giving much greater latitude to parents to choose the time for going away. There is no doubt of the serious inconvenience of the present state of affairs, but it is doubtful whether a three months' holiday for children at school would not be too drastic a remedy.

Therapeutical Notes.

Treatment of Spasmodic Asthma.—In *Folia Therapeutica* for July, 1910, R. O. Moon discusses the general treatment of the paroxysms of asthma with a view of preventing their occurrence and the treatment of the paroxysm itself. The influence of climate, exercise, baths, and diet receives attention. Many cases of pure asthma are improved by exercise, and sea bathing in the summer is an excellent tonic to the nervous system. For a home bath water at a temperature of 90° F. with the addition of sea salt is often beneficial. Another plan is to pour cold water down the spine of the patient while he is sitting in warm water, the spine to be afterwards well rubbed with a rough towel. There is, of course, no such thing as an asthmatic diet. The times and seasons of eating are more important than what is actually eaten. Breakfast and luncheon may be hearty meals, as the patient usually feels better in the early part of the day, but the evening meal should be light and simple, and after it not less than a couple of hours should elapse before going to bed. Among the sources of irritation mentioned by the author are the smell of certain flowers and emanations from particular animals such as cats, dogs, or horses. These are alluded to under the heading of exciting causes of the paroxysms. He advises the removal of such forms of nasal obstruction as polypi and adenoids and in some cases the cauterization of the nasal mucous membrane. As to drugs he has found nothing so useful for preventing the recurrent attacks as arsenic. He prescribes this as Fowler's solution in three minim doses three times a day, gradually increased. It is often advantageously combined with potassium iodide, though he prefers to give the arsenic alone, and if the attacks recur rather frequently to give potassium iodide at bedtime in the following mixture:

℞ Potassium iodide, ...gr. viii;
Wine of ipecac, ...ɱxv;
Syrup of tolu, ...ʒss;
Water, enough to make .....ʒi.
M. et Sig.: To be taken at bed time.

Ten minims of tincture of stramonium three times a day is sometimes useful in keeping off the attacks, but the author finds it more effective in averting the spasm to give it at bedtime in the form

of a pill combined with belladonna and conium, as follows:

℞ Extract of stramonium, ...gr. ⅓;
Extract of belladonna, ...gr. ss;
Extract of conium, ...gr. ii.
M.

The comfort of the patient is improved by making him sit in a chair leaning forward on something in front of him so as to raise the shoulders.

Among other remedies noted by Dr. Moon are the application of heat to the surface by means of hot flannel stoops all over the chest; a hypodermic injection of morphine (gr. 1¼) is nearly always rapid and effective in allaying the paroxysms, but there are objections to the use of this remedy in a chronic disease like asthma; chloroform inhalations are effective but transient, and the same transitory effect is an objection to the use of vasodilators like amyl nitrite and nitroglycerin. A cup of strong coffee without milk or sugar taken on an empty stomach has been found useful in mild cases. Reference is also made to the use of inhalations and the smoking of nitrated cigarettes containing mixtures of stramonium, belladonna, and hyoscyamus.

The Antiseptic Treatment of the Nasopharynx.—In a communication to the Congrès de la Société française d'oto-rhino-laryngologie which is published in *Revue hebdomadaire de Laryngologie, d'otologie et de Rhinologie* for July 23, 1910, Sieur and Rouvillois criticise some of the present day methods of disinfecting the mucous cavities of the nasopharynx and arrive at the conclusion that inhalations are superior to liquid applications. They should be directed against the parts with sufficient force to enable them to penetrate the folds and crypts of the mucosa. The instrument should be introduced through the nose and not by the mouth. They describe a small cannula which they have devised for the purpose of securing greater penetration. This is connected by two tubes with a flask containing the antiseptic, one of which descends into the liquid while the other is situated above. Arranged on the reverse principle of the ordinary nebulizer it permits of the gentle but deep inhalation of the medicated vapor, as the cannula is shaped to penetrate far back in the nasal fossa. The formula for the inhaling fluid has been previously published, but it may be well to repeat it in this connection. It is as follows:

℞ Iodine. 5v;
Guaiacol, ...mlxxx;
Thymol, ...gr. iv;
Diluted alcohol, ...5vi.
M.

The Treatment of Acne of Gastric Origin.—Sabouraoud, in *La Clinique* for July 29, 1910, describes the various symptoms of this disorder. As internal medication he recommends the free use of alkaline waters and he has observed good effects from the use of an alkaline powder composed as follows:

℞ Sodium bicarbonate, ...gr. v;
Sodium phosphate,
Sodium sulphate, ...āā gr. iss.
Sig.: One or two powders in water after each meal.

As an external application sulphur should be applied, either in the form of lotion or ointment. Vidal's lotion modified by the addition of zinc oxide is recommended. This has the following composition:

℞ Precipitated sulphur,
Zinc oxide, ...āā gr. lxxv;
Spirit of lavender, ...5v;
Distilled water, ...5iii.
M.
Sig.: Shake well and apply with a camel's hair pencil, carefully avoiding getting any into the eyes.

A mixed ointment of sulphur and ichthyol is considered good.

℞ Precipitated sulphur, ...gr. v;
Ichthyol, ...gr. v;
Zinc oxide, ...ʒii;
Petrolatum, ...3i.
M.

Like the lotion this is applied at night time.

In the case of female patients these applications are replaced during the day by an imperceptible coating of cream which is lightly dusted with powder. The cream has the following composition:

℞ Zinc oxide, ...gr. xlv;
Petrolatum, ...5v;
Wool fat, ...5i;
Distilled water, ...5i;
Perfume (verveine) .....q. s.
M.

REMEDIES OF RECENT INTRODUCTION.

(*Continued from Page 273.*)

Mercury Oleobrassidate is obtained by mixing oleic and erucic acid from turnips with mercuric oxide. The product contains 30 per cent. of mercury and is a clear yellow jelly, used by itself as an ointment. In syphilis daily inunctions of eighteen grammes are applied, otherwise the indications are the same as for blue ointment.

Morbicid, marketed as a disinfectant, contains about 12 or 13 per cent. of formaldehyde and a powerful bactericidal soap. The combination is said to have a disinfectant power equal to that of 40 per cent. formaldehyde. It is used in 2 per cent. solution.

Muscusan is the proprietary name given to zinc dibordiorthooxybenzoate, which is said to be a noncaustic bactericidal antiseptic.

Nastin is the name applied to a glycerin ester of streptothrixleproidis for use in the treatment of leprosy. It is supplied in different percentage strengths.

Neopyrine, valerylamidoantipyrine, forms white, almost odorless crystals having a bitter taste resembling that of quinine. It is sparingly soluble in water, but readily soluble in methyl alcohol and in chloroform. A bromine compound is also made containing 21.85 per cent. of bromine.

Neopyrenol is thymol rendered watersoluble by the action of paradioxybenzol. To the product are added benzoin, sodium benzoate, and sodium oxybenzoate. It is used in the treatment of cough, rheumatism, and fever.

Nesain is a combination of arsenic and protein, and forms a yellowish, almost tasteless and odorless powder, containing 10 per cent. of arsenic. It is intended for use in 10 per cent. solution as a hypodermic injection in carcinomatous processes.

Neuroton is the name given to spermonuclein salicylate. It is employed as a tonic and in the treatment of morphinism. Marketed in the form of sterile solutions for subcutaneous injection, and as tablets.

NEW YORK MEDICAL JOURNAL
INCORPORATING THE
Philadelphia Medical Journal
and The Medical News.

A Weekly Review of Medicine.

Edited by
FRANK P. FOSTER, M. D.

Address all business communications to

A. R. ELLIOTT PUBLISHING COMPANY,
Publishers.
66 West Broadway, New York.
Cable Address: Medjour, New York.

SUBSCRIPTION PRICE:

Under Domestic Postage Rates, $5; under Foreign Postage Rate, $7; single copies, fifteen cents.

Remittances should be made by New York Exchange or post office or express money order, payable to the A. R. Elliott Publishing Co., or by registered mail, as the publishers are not responsible for money sent by unregistered mail.

Entered at the Post Office at New York and admitted for transportation through the mail as second class matter.

NEW YORK, SATURDAY, AUGUST 13, 1910.

TEN YEARS OF PROGRESS: A STATEMENT FROM THE PUBLISHERS.

Ten years have elapsed since the *New York Medical Journal* passed into the control of the A. R. Elliott Publishing Company. This decade in the history of the *Journal* has been one of constant improvement in every direction. The quantity of reading matter furnished annually has been increased by the equivalent of 630 pages. The high ethical standards always maintained by the *Journal* have been rigidly adhered to and have been even more scrupulously guarded than at any previous time. Its list of contributors embraces the majority of the leaders in medical thought all over the United States and Canada.

In 1903 the *Philadelphia Medical Journal* and in 1906 the *Medical News* were purchased and both consolidated with the *New York Medical Journal*, adding largely to its prestige and circulation.

In its department of Readers' Discussions monthly prizes of twenty-five dollars have been awarded for the best papers on practical subjects, and $2,500 has been paid out in these prizes.

When President McKinley was shot the *New York Medical Journal* published an authoritative telegraphic account of the medical and surgical details of the case, and followed this with photographic illustrations of the brain of the assassin after his execution, with a careful analytical study of it by Dr. Spitzka.

When the coronation of King Edward was postponed on account of an operation demanded for perityphlitis the *New York Medical Journal* published cabled reports furnished it exclusively by the *Lancet*, of London, with discussions of the case by five of the leading surgeons of the United States.

These are but particular instances in which, under the present management, the *New York Medical Journal* has made use of modern, energetic methods in giving its readers full, prompt, and accurate information on topics of timely interest. All this has been done without in any wise sacrificing the high standards maintained by the *Journal* in its editorial policy.

In the subscription department a large and skilful force of canvassers has been constantly engaged, with the result that the subscription list has grown steadily and substantially, particularly among the better class of physicians, whose discrimination enables them to appreciate the advantages offered by a publication of such high character.

The publishers realize that the success so far achieved but imposes obligations for still further effort, and take this opportunity to assure their patrons that intelligent, well considered, and persistent effort will be put forth to make the publication of even greater value in the future than in the past.

LACTIC ACID IN THERAPEUTICS.

It is interesting to learn that some opposition seems to have developed to the lactacidgen plan of overcoming fæcal toxæmia, or intestinal putrefaction, the term more commonly used. The idea put forth by Metchnikoff, and elaborated by many of his students, was to inoculate the large intestine with the bacillus of Massol, occasionally alluded to as the *Bacillus bulgaricus*. The theory was a beautiful one and extremely simple. The alkalinity of the large intestine favored the development of certain toxæmic products, and if soured milk or milk inoculated with the bacillus of Massol was taken daily, lactacidgens would be formed which would make the channel uninhabitable for the bacteria of putrefaction.

The tendency in medicine as in other things is always toward the novel, and so we find it here. The lactophosphate compounds have long been used in medicine, and lactic acid salts of calcium hold a place not inferior to that of the more vaunted preparations. We are strongly of the opinion that among the most unjustly neglected therapeutic substances which find place in the *Pharmacopœia* is the lactic acid salt of calcium. Perhaps the most agreeable preparation of this salt is the syrup of calcium lactophosphate, which is made by neutralizing calcium carbonate with lactic acid and phosphoric acid, and adding sweeteners and flavorings. Compounds of this character are vastly more esteemed on the Continent of Europe than they are here, perhaps because of the fact that much greater attention is paid there to the niceties of prescribing, and bedside instruction and clinical work are given the importance which they deserve.

In chlorosis the lactic acid salts of calcium frequently yield better results than either the oxides of iron or arsenic. But we are still prone to pre-

scribing routine measures, without regard to modern experimentation. The thought is obtruded on us by some observations of Dr. Salisbury-Sharpe's in the *Lancet* which appear very convincing. He criticises the theory that the value of the sour milk treatment depends on the number of living lactic acid bacilli cultivated in the large intestine, and comes to the conclusion that it is not the bacillus, but the lactic acid produced by it, which is effective in controlling the toxæmic flora, the bacilli acting very much in the same way as the diphtheria bacilli act, by generating a toxic fluid which, invading the blood cells, gives rise to diphtheritic intoxication.

The theory impresses us as a reasonable one, and the only difficulty connected with applying it in practice would be that of implanting the lactic acid or its compounds in the large intestine, where they would exert their greatest effect. The old idea of administering calcium lactophosphate and calcium salts generally, although empirical to a large extent, was based on sound principles. In the system the lactic acid salts are decomposed, the acid being eliminated from the intestine and a portion of the compound being absorbed into the blood. We are too apt to neglect old and approved remedies for the newer things. In the *Pharmacopœia* and in the *National Formulary* are preparations of the lactophosphates of calcium which will answer many indications, and it is in some measure a reflection on our teachers of therapeutics that these desirable compounds should be so neglected as they are. We are quite of the opinion that the toxic flora of the large intestine could be controlled just as well with the lactic acid salts as with any of the curious mixtures of bacilli which make their appearance on the market to-day under different high sounding names.

MIDSUMMER MADNESS.

Who shall say that there is not some real pertinence in the phrase? There seems to be, so far at least as concerns the assassination of high officials in the United States. Within no great number of years three of our Presidents have been murdered, and now a wretch has brought down the mayor of New York with his abominable pistol. With the exception of Lincoln, all the Presidents that we have lost by murder were attacked in summer, and it is in summer that Judge Gaynor has been felled. Such attacks are plainly due to madness (though not of a kind, we hope, that will ever be held to extenuate a murderous act), for the assailant has nothing to expect but an ignominious death. It seems as if our alienists might profitably investigate the connection, if there really is any, between such barbarous deeds and the heat of summer. In the mean time, is nothing to be done to stem the tide of assassination? We presume it is too much to expect that the police will shadow every political zealot and every disappointed officeseeker, but at least our high officials, one would think, may be protected.

A MEDICAL MAN AT THE HEAD OF THE ARMY.

The selection of Major General Wood as Chief of Staff of the United States Army seems to give general satisfaction, both within and without the service. For the military surgeon his appointment to this post is a matter of particular interest, as it puts in the position of general executive a man whose early training and the major part of whose service have been those of a medical officer. One of the important factors in General Wood's rapid advancement has been the excellent outcome of his administration in Cuba, which was due probably as much to his knowledge of hygiene and medicine as to his acquaintance with military matters and his administrative ability.

The medical service of the army seems to be in excellent condition and is certainly in a much better state than it has been in at any time since the war with Spain. The organization of the Medical Reserve Corps was a most important step in the direction of preparing for war by training in the service physicians interested in military affairs, but who did not care to give up their private practice save in case of war. We believe that the corps is capable of considerable expansion and have no doubt that in his capacity of Chief of Staff General Wood will see to it that it is developed to the fullest capacity, both in numbers and in efficiency.

The joint manœuvres of the militia with the regular army which have been carried on at several points during the past few summers have been no less valuable to the medical than to the line officers in the militia. They have brought to light points of weakness in the training and equipment of the medical department of the State troops, and we feel that much improvement could be brought about if an effort were made by the War Department to give the medical officers of the militia special field training in addition to that which they get in the manœuvres with their own particular troops.

The voyage of the naval training squadron this summer, in which the forces of the Naval Militia of New York were divided and allotted to the different vessels in small detachments taking the place of the regular sailors and regular officers, provided unique and ideal conditions of training for the volunteer forces. It is true that some of the young

gentlemen who formed the rank and file of the Naval Militia were not satisfied with the accommodations furnished and the treatment received, but this sort of disgruntlement was naturally to be expected of men who in their private capacity probably fare as well as the officers under whom they served at sea, if not better. Certain it is that by placing them among the regular sailors and subjecting them to the same conditions to which they would be subjected in active service these amateur sailors learned more in their ten days' cruise than they would have learned in a whole summer spent on their own ship and with only their own men and officers.

Manœuvres of the land forces, particularly where they present a progressive problem, as was the case in the manœuvres of 1909 in Massachusetts, impose very nearly the same conditions as would be met with in active service on land. We believe, however, that much better results would be obtained from such manœuvres if the militia commands were broken up for the time being and provisional regiments formed containing, say, one batallion of regulars to two of militia. The militia private has much to learn as to the care of himself from the regular, and he can best learn this by intimate association, which can only be had by introducing some of the regulars into each regiment. In the same way the medical officers can learn by association in command with the medical officers of the regular army. We feel sure that General Wood in his position as Chief of Staff will see that the members of the Medical Corps of the militia will have every opportunity to perfect their training for the exigencies of active service. We congratulate the service upon the elevation of a man of medical training to the post of executive head of the army and confidently expect good results to follow, not only for the Medical Corps, but for the army as a whole.

A NEGLECTED DEPARTMENT OF PHARMACOLOGY.

It is somewhat astonishing that with the general progress made in pharmacological research of late years one department has lagged so notably. In the use of the term pharmacology we refer to its later connotation, that is, the art and practice of identifying and preparing drugs, such as is employed by the New York State Education Department, which is recognized in the pharmacy law of the State which became operative on the first of this month. The department we have in mind is that pertaining to the preparations used in the treatment of diseases of the skin, and more particularly ointments. During the past twenty years scarcely any progress has been made in the elaboration of a general ointment base capable of being used for any of the ointments of the *Pharmacopœia* or such as might be formulated by either a specialist in skin diseases or a general practitioner of medicine. The *Pharmacopœia* still confines us to varying mixtures of white wax and benzoinated lard, paraffin and petrolatum, or wool fat and petrolatum, the last named combination representing perhaps the only novelty in ointment bases that has been evolved by the pharmacologists during the period mentioned. We still derive most of our information regarding novelties in ointment formulas from German sources, and there has been a noted paucity of original work in this department on the part of American workers.

This is something of a reflection on the revisers of our *Pharmacopœia,* who in common with allied workers have paid less attention to the formulation of compounds of agreeable appearance and active therapeutic action than to a certain definiteness of composition of the simple solutions of drugs represented by the tinctures and fluid extracts and the tests for determining the purity of chemicals. In fact, the complaint has been frequently expressed that the *United States Pharmacopœia* is more of a chemical reference work than a guide to the correct manipulation and mixing of simple drugs to produce compounds of distinct therapeutical activity to be used on special indications.

They order these things better in Germany, at least so far as the formulation of ointments is concerned. The German pharmacologists make better use of compounds of wool fat and olive oil than their confrères in this country, and, while some of their ointment formulas are polypharmacal in character, practitioners find them better adapted as a rule for conditions under treatment than some of the similarly named ointments of our *Pharmacopœia.* It only requires a glance at the chapter on the treatment of skin diseases in Dr. Iwan Bloch's collection of the teachings of Unna (*Die Praxis der Krankheiten. Unna's Lehren für Studierende und Aerzte.*) to demonstrate this. From the ninth chapter on, this work teems with admirably constructed formulæ for the preparation of ointment applications of all kinds, varying from simple pastes and soap salves to glycerin-gelatin creams and pencils and varnishes.

The great desideratum in American pharmacy, so far as ointments are concerned, is a general base for all ointments, including those official in the *United States Pharmacopœia.* The nearest thing to this is represented by the wool fat ointment of the *German Pharmacopœia,* but it does not fulfil all the requirements indicated and there is plenty of room for the

exercise of ingenuity on the part of American pharmacists, as it is, of course, a pharmacological subject, though dermatologists may be expected to lend their aid in the formulation of correct compounds. Let us hope that the next committee on ointments working under the direction of the general committee on the revision of the *Pharmacopœia* will redeem themselves from the faults of omission of previous committees, who have virtually accomplished nothing in this department of practical pharmacy during their various tenures of office.

THE INCUBATOR OUTDONE.

We medical men have to deal daily with the human stomach, for, in spite of its wonderful mechanical and chemical achievements, it does occasionally cry out for repairs. It seems now that its very success in an extraordinary undertaking may prove its own and its owner's undoing. So far as we know, it is not until within the last few days that the stomach has ever been credited with being able to hatch a cooked egg; yet, according to a recent press dispatch, that is what it appears to have done, and those of us who feel inclined to scoff at newspaper medicine should bear in mind what is said in one of the comic operas: *Il faut toujours ajouter foi à la Gazette de Hollande.* In its issue for August 4th the *New York Tribune* published the following:—

Pittsburgh, August 3.—William Douglass, of the North Side, is dead as the result of a turtle's egg hatching in his stomach. A few weeks ago Douglass partook of some turtle soup. Four days after taking the soup he became ill and numerous physicians were unable to diagnose his discase. Yesterday he died. An autopsy was performed and a partially formed turtle, almost as large as a hen's egg, was found in his stomach.

Obituary.

CHARLES JEWETT, M. D., Sc. D., of Brooklyn.

Dr. Jewett died on Saturday, August 6th, of apoplexy, in the seventy-second year of his age and, up to the time of the fatal attack, in full possession of his intellectual vigor. He was born in Bath, Maine, and was graduated in arts at Bowdoin College in 1864. He received his medical degree from the College of Physicians and Surgeons, New York, in 1871, and at once entered upon practice in Brooklyn. He was for many years gynæcological and obstetrical surgeon and professor of obstetrics in the Long Island College Hospital, consulting gynæcologist to various other hospitals, a member of numerous medical organizations, and an eminent practitioner. He was the author of an excellent textbook of obstetrics and he made many notable contributions to the literature of obstetrics and gynæcology. He was a man of commanding presence and of great geniality. He was highly esteemed by the community in general as well as by his professional brethren.

CHARLES JEWETT, M.D., Sc.D.

News Items.

A Campaign Against Tuberculosis in the Philippines.—A national association for the study and treatment of tuberculosis was organized in Manila on July 29th. Secretary of War Dickinson was present and made the principal address.

Large Bequest to St. Luke's Hospital.—Through the will of Norman I. Rees, who died in New York on August 3d, St. Luke's Hospital will come into the possession of lands in Virginia and West Virginia which are said to contain large deposits of coal and iron.

An Addition to the Medico-Chirurgical Hospital of Philadelphia.—Two stories are to be added to the building of the Medico-Chirurgical Hospital at the northeast corner of Eighteenth and Cherry Streets, thus increasing the facilities of the hospital by eight additional wards.

An Opening for a Physician at Otis, Colo.—We are informed that there is at present an opening for a physician at Otis, Washington County, Colo. Both the town and the surrounding country have been settled by a good class of Americans, who are prosperous, and it is believed that there is an opportunity for an energetic young man to establish a good practice in this place.

The Superintendency of the Mohansic State Hospital.—Announcement is made by the State Commission in Lunacy that Dr. Isham G. Harris, of Poughkeepsie, N. Y., has been appointed superintendent of the new Mohansic State Hospital at Lake Mohansic, near Peekskill. The appointment was made from the State civil service eligible list, and has been approved by the board of managers of the institution.

A Pasteur Institute in Charleston, S. C.—The department of health of Charleston, S. C., has established a Pasteur institute, which will be under the direction of Dr. J. Mercier Green, health officer of the city, and Dr. G. McF. Mood, meat and milk inspector. Patients may receive treatment either at the laboratory of the medical college or at their homes.

A New Hospital in Hagerstown, Md., will be built under the direction of Dr. Henry M. Hurd, superintendent of the Johns Hopkins Hospital, Baltimore. The building will be of brick and stone, with concrete foundation, and there will be hardwood floors and mahogany finishing. It will be equipped with all modern appliances. The estimated cost is $60,000.

Addition to the German Hospital.—The demands upon the German Hospital, on St. Nicholas Avenue and Stanhope Street, Brooklyn, have become so great during the past months that the erection of an addition to the present hospital structure is an imperative necessity. The board of trustees recently authorized the erection of an extension to the hospital building, the work for which is already in progress. The cost for this improvement is far in excess of the funds at hand, and the board of trustees has appealed to the public in general for funds to carry on the work.

The Cumberland County, N. J., Medical Society held its July meeting in Bridgeton, on July 15th, with the president, Dr. Alfred Cornwell, in the chair. The principal feature of the programme was a clinic on idiocy, imbecility, and feeblemindedness, held by Dr. Alfred Gordon, of Philadelphia. Dr. Madeleine A. Hallowell, superintendent of the State Home at Vineland, furnished six patients for this clinic. Among the guests were Dr. Daniel Strock, of Camden; Dr. James Hunter, of Westville, and Dr. Charles Heritage, of Glassboro. The October meeting of the society will be held in Bridgeton, at the City Hotel.

Portrait of Dr. Pearson to be Added to the Collection of the University of Pennsylvania.—A commission for painting the portrait of the late Dr. Leonard Pearson, dean of the Veterinary School of the University of Pennsylvania, has been given by the alumni society of the school, through its secretary, Dr. C. J. Marshall. The painting is to be life-size, and will be finished some time this fall. It will be the first painting to hang in the new building of the Veterinary School. The collection of the University now consists of about one hundred and fifty life-size portraits, and many eminent artists are represented.

An Executive Committee of Medical Officers has been appointed by Health Commissioner Porter, with the following as members: Dr. F. C. Curtis, of Albany; Dr. Edward Clark, of Buffalo; Dr. F. D. Earl, of Ogdensburg; Dr. W. B. Gibson, of Huntington; Dr. A. D. Lake, of Gowanda; Dr. J. W. Le Seur, of Batavia; Dr. D. C. Moriarta, of Saratoga Springs; Dr. Joseph Roby, of Rochester, and Dr. D. M. Totman, of Syracuse. This committee will act in an advisory capacity to the commissioner, meeting with him at such time and place as necessity may require. At the first meeting of the committee, held on July 15th, matters relating to public health were discussed informally.

Personal.—Dr. B. Franklin Royer, of Philadelphia, has been appointed chief medical inspector for the Pennsylvania State Department of Health, to succeed Dr. A. B. Moulton.

Dr. Gustav Fischer, head of the well known publishing house of Jena, Germany, died recently.

Dr. William N. Lynn has been appointed superintendent of the Lincoln Memorial Hospital at Knoxville, Tenn.

Dr. Howard L. Bronson, assistant professor of physics in McGill University, has been appointed to the chair of physics in Dalhousie University, Halifax, to fill the vacancy created by the resignation of Professor A. S. McKenzie to accept a chair in the Stevens Institute of Technology.

Dr. John Trowbridge Rumford, professor of applied science at Harvard University, has tendered his resignation, to take effect on September 1st. Professor Trowbridge is sixty-seven years of age.

The Summer School of Medicine at Harvard.—The following lectures will complete the series of special lectures arranged by the Harvard Medical School for the benefit of all members of the various summer schools at Harvard, as well as the medical profession: August 16th, Intestinal Bacteria, by A. I. Kendall, Ph. D., instructor in preventive medicine and hygiene; August 19th, The Symptomatology and Treatment of Arteriosclerosis, by W. H. Smith, instructor in clinical medicine; August 23d, Dementia Præcox, by Dr. E. E. Southard, Bullard professor of neuropathology; August 26th, Surgical Diagnosis of Diseases of the Gallbladder, by Dr. F. B. Lund, lecturer on surgery.

A New Edition of Gray's Anatomy.—Announcement is made by the publishers, Messrs. Lea & Febiger, of Philadelphia, that the eighteenth edition of Gray's *Anatomy* will be ready in about a month. The work of revision has been conducted by Dr. E. A. Spitzka, professor of anatomy in the Jefferson Medical College, and the changes in both text and illustrations have been so extensive that the entire book has been reset. By means of rearrangement many duplications have been eliminated, and this, together with condensation wherever practicable, has made it possible to reduce the size of the book by about one hundred pages. The illustrations have been thoroughly revised, many cuts being replaced by new ones, and several new colored drawings have been added.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Department of Health for the following statement of new cases and deaths reported for the two weeks ending August 6, 1910:

	July 30th		August 6th	
	Cases.	Deaths.	Cases.	Deaths.
Tuberculosis pulmonalis	523	167	674	137
Diphtheria and croup	227	21	214	17
Measles	206	8	179	11
Scarlet fever	83	3	85	2
Smallpox	1	..	1	..
Varicella	9	..	9	..
Typhoid fever	91	17	96	9
Whooping cough	42	14	55	9
Cerebrospinal meningitis	2	5	6	5
Total	1,184	245	1,319	190

Medical Fellowships at the University of Galveston, Texas.—Through the Texas Federation of Women's Clubs the regents of the University of Galveston have established ten fellowships carrying with them a stipend of $35 a month for eight months, open exclusively to young women desiring to study medicine at the medical department of the university. The regents and President Mezes believe that there is need of more women physicians in Texas and that competent young women with tastes in that direction will find excellent openings for personal success and for social service. While the number of scholarships is tentatively set at ten, more scholarships will be awarded if a larger number of competent candidates apply for them. Applicants have to satisfy the entrance requirements at the medical department and be above the average in general capacity. Mrs. E. E. Bramletter, of Huntsville, is retiring chairman of the educational committee of the federation, and will receive communications relative to the fellowships until September 1st.

The Outbreak of Cholera in Russia.—According to press despatches, cholera continues to spread in Russia with alarming rapidity, particularly in the southern mining districts and in St. Petersburg, where the epidemic is approaching the proportions of the epidemic of 1908. Statistics furnished by the central sanitary bureau show that during the week ending July 30th there were 15,244 cases of cholera and 6,944 deaths. Of these, 4,780 cases and 2,233 deaths were reported from South Russia. In answer to the appeal of the United Mine Owners' Association for special measures to check the epidemic and stop the panic, which threatens to stop the production of coal and iron in South Russia, the government has sent to the mining region a special commission to study the situation. The commission is given extensive powers to organize sanitary preventive work. Professor Rein, of the medical faculty of the University of St. Petersburg, is reported to have described the outbreak as an imperial danger. He estimates that the death list for 1910 numbers 57,000, as compared with 28,000 in 1909, and 17,000 in 1908. In his opinion the danger is intensified by the fact that the epidemic has spread from the towns to remote rural districts.

Vital Statistics of Minneapolis.—During the month of June, 1910, the deaths from all causes numbered 309, in an estimated population of 310,000, corresponding to an annual death rate of 9.72 in a thousand of population. The average death rate for the year 1909 was 11.58. The deaths of children under five years of age numbered 80; 41 under one year of age, and 39 between one and five. There were 21 stillbirths, 14 males and 7 females.

Mortality Statistics of the State of New Jersey.—The number of deaths reported to the Bureau of Vital Statistics of the State of New Jersey for the month ending July 10, 1910, was 3,117, as compared with an average of 3,123 for the previous twelve months. The deaths of children under five years of age numbered 1,024; 789 under one year of age, and 235 between one and five years of age. The deaths from principal causes were: Typhoid fever, 37; measles, 18; scarlet fever, 19; whooping cough, 41; diphtheria, 34; malarial fever, 5; tuberculosis of lungs, 308; tuberculosis of other organs, 51; cancer, 156; diseases of nervous system, 374; diseases of circulatory system, 353; diseases of respiratory system (pneumonia and tuberculosis excepted), 156; pneumonia, 184; infantile diarrhœa, 345; diseases of the digestive system (infantile diarrhœa excepted), 176; Bright's disease, 187; suicide, 45; all other diseases or causes, 628.

Vital Statistics of New York.—During the week ending July 30, 1910, the deaths from all causes reported to the Department of Health of the City of New York numbered 1,698, corresponding to an annual death rate of 18.80 in a thousand of population, as compared with a rate of 16.96 for the corresponding week in 1909. The annual death rate for the week in each of the five boroughs was as follows: Manhattan, 18.79; the Bronx, 17.77; Brooklyn, 18.61; Queens, 20.02; Richmond, 23.69. There were 136 stillbirths. The deaths of children under five years of age numbered 725; 545 under one year of age, 111 between one and two years of age, and 69 between two and five years of age. The deaths from diarrhœal diseases under five years of age numbered 400; over five years of age, 426. There were 28 deaths from sunstroke, 15 from suicide, 4 from homicide, and 90 due to accidents.

The Health of Philadelphia.—During the week ending June 25, 1910, the following cases and deaths from transmissible diseases were reported to the Department of Health of Philadelphia: Malarial fever, 0 cases, 1 death; typhoid fever, 17 cases, 2 deaths; scarlet fever, 28 cases, 0 deaths; puerperal fever, 1 case, 6 deaths; erysipelas, 2 cases, 2 deaths; chickenpox, 39 cases, 0 deaths; diphtheria, 70 cases, 12 deaths; measles, 206 cases, 6 deaths; whooping cough, 48 cases, 6 deaths; pulmonary tuberculosis, 103 cases, 43 deaths; pneumonia, 15 cases, 34 deaths; mumps, 20 cases, 0 deaths; trachoma, 1 case, 0 deaths. There were 6 deaths from tuberculosis other than that of the lungs, one death from dysentery, and 76 deaths from diarrhœal diseases under two years of age. There were 55 stillbirths, 36 males and 19 females. The deaths of children under five years of age numbered 170, 119 under one year of age, 27 between one and two years of age, and 24 between two and five years of age. The deaths from all causes numbered 525 in an estimated population of 1,500,595, corresponding to an annual death rate of 17.08 in a thousand of population.

The Health of Chicago.—During the week ending July 30, 1910, the following new cases of and deaths from transmissible diseases were reported to the Department of Health of Chicago: Typhoid fever, 27 cases, 9 deaths; measles, 119 cases, 6 deaths; whooping cough, 55 cases, 1 death; scarlet fever, 69 cases, 5 deaths; diphtheria, 70 cases, 14 deaths; chickenpox, 4 cases, 0 deaths; tuberculosis, 112 cases, 62 deaths; pneumonia, 12 cases, 53 deaths. Sixteen cases of contagious diseases of minor importance and 23 cases of diarrhœal diseases were also reported, making a total of 507 cases reported. The deaths under two years of age from diarrhœal diseases numbered 181. There were 4 deaths from sunstroke and 31 deaths from congenital defects and accidents. The total deaths of children under five years of age numbered 308, of whom 219 were under one year of age. The total deaths from all causes, exclusive of stillbirths, numbered 701, corresponding to an annual death rate of 16.0 in a thousand of population, as compared with a death rate of 13.4 for the preceding week, and 13.4 for the corresponding week in 1909.

Pith of Current Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL.

July 28, 1910.

1. Gynæcological Operations on Neurasthenics. Advantages, Disadvantages, Selection of Cases, By Edward Reynolds.
2. Nephritis without Albumin. By C. A. Howland.
3. Drugs in Practice, By M. Vejux Tyrode.
4. The Sputum of Typhoid Fever Patients as a Possible Source of Infection, By Elmer S. Tenney.
5. The Nasal Septum: Important Points in Anatomy and Submucous Resection, By Oliver A. Lothrop.
6. The Use of Tuberculin at the Sharon Sanatorium, By Walter A. Griffin.

2. Nephritis without Albumin.—Howland says acute nephritis may exist without the presence of albumin, and death may occur with all the symptoms of uræmia. Careful pathological study of kidney tissue when during life acute nephritis without albumin has been diagnosticated may reveal a distinct type of hitherto unrecognized nephritis. The fact that nephritis may accompany other severe diseased conditions does not lessen its importance. The knowledge of its existence will to a great degree influence the treatment and prognosis. No examination of the urine can be called thorough unless a microscopical examination is made. This cannot be satisfactorily done unless the urine is centrifuged in a good centrifuge. No physician can be sure that his patient is free from a kidney lesion without such an examination.

4. The Sputum of Typhoid Fever Patients as a Possible Source of Infection.—Tenney has studied the saliva and sputum of fifty-three patients with typhoid fever, several of whom showed bronchial symptoms, but none pneumonia or any laryngeal complications, but the bacillus was not found by means of the technique employed. Typhoid bacilli will live for at least one hundred and twenty-five days in the saliva and sputum and can be readily transplanted from one specimen of such material to another and kept growing in it at room temperature for a long time. The examination of this limited number of cases, concludes the author, shows that, in those uncomplicated by pneumonia or by laryngeal inflammation, the typhoid bacillus is not frequently found in the mouth. In view of the reported finding of the bacillus in cases complicated by pneumonia and by laryngeal inflammation, it would seem that more work, especially upon cases showing these symptoms, should be done along the lines followed in this series. While the sputum does not frequently contain the typhoid bacillus, it does so occasionally, and on that account it cannot be ignored as a source of infection.

6. Tuberculin.—Griffin says that, when carefully given, tuberculin is not likely to do any harm and that it frequently is of great benefit, affecting a cure in some patients who would not be expected to do well under ordinary methods of treatment, and, finally, that no patients with frank tuberculosis should be denied the privilege of tuberculin treatment if they desire to have it.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

August 6, 1910.

1. The Surgical Consideration of Congenital and Developmental Defects Leading to Obstinate Constipation, By JOHN G. CLARK.
2. Experiments with "Cactina" and "Cactin," By E. P. LYON and GUY L. QUALLS.
3. The Rôle of Obstetrics in Preventive Medicine, By W. P. MANTON.
4. Idiocy and Hereditary Syphilis. Study of 204 Cases with the Serum Diagnosis Test, By CHARLES E. ATWOOD.
5. The Rôle of Otology and Rhinology in Preventive Medicine, By JOHN J. KYLE.
6. Nasal Diphtheria, By DUNBAR ROY.
7. Tests of Visual Acuity and Cards for Subjective Correction of Ametropia, By EDWARD JACKSON.
8. The Uselessness of Local Treatment in Puerperal Sepsis, By J. H. CARSTENS.
9. Chronic Influenzal Bronchitis, By J. D. MADISON.
10. Concomitant Squint, with some Remarks on Its Ætiology and Treatment, By A. EDWARD DAVIS.
11. Classification of Appendicitis, By WILLIAM CARPENTER MACCARTY.
12. The Teeth as a Factor in Pathogenesis, By H. A. POTTS.
13. The Teeth and Alveolar Processes as Points of Entrance for the Tubercle Bacillus, By FREDERICK B. MOOREHEAD.
14. Gonorrhœal Arthritis of Wrist and Knee in a Child, Three Weeks of Age, By G. FRANK LYDSTON.
15. New Tonsil Knife and Dissector, By E. R. CARPENTER.
16. A Flexible Contact Diaphragm and Protective Shield for X Ray Tubes, By SINCLAIR TOUSEY.
17. Liver Abscess. A Report of Two Cases of Abscess of the Left Lobe, By ROBERT M. CULLER.
18. The Value of Ehrlich's Triacid Stain in Blood Work, By ROGER S. MORRIS.
19. An Improved Rongeur for Mastoid Operations, By W. SOHIER BRYANT.
20. The Uvula and Its Sins, By ADRIAN F. BURKARD.

1. **Surgery in Constipation.**—Clark says that developmental anomalies are at the bottom of many cases of chronic constipation. Posture is frequently a result rather than a cause of this ptosis. Congenital potential factors are present in many individuals which become active through accident, such as traumatism, rapid and badly cared for childbirth, habitual constipation, operative adhesions, etc. Neurasthenia often dates from childhood or puberty; operation, therefore, in the adult may give only partial relief because of this constitutional asthenia. Cases in which there is a recent acquirement of the active factor give the best surgical results. Various suspension operations are valuable in properly selected cases, but disappointing in the remainder. At best these fixation points may be unstable. Radical excision of obstructive portions of the large bowel may give the highest percentage of operative mortality but is likely to give the best ultimate results in the survivors. In no field of surgery should haste be made slower than in this. It is not a field for the novice. The most important factor in the diagnosis is a detailed clinical history pointing accurately to obstructive possibilities. A well taken skiagraph is of the greatest confirmatory value.

4. **Idiocy and Hereditary Syphilis.**—Atwood has used the Wassermann-Noguchi test in 204 idiots, all of low grade, eighty-eight girls and 116 boys; 140 were under twenty years of age. Positive reactions were obtained in thirty.

6. **Nasal Diphtheria.**—Roy says that many rhinologists no doubt often have looked into the nasal cavities and have found adhesions between some portions of the turbinates and septum and have asked immediately whether there has not been an operation previously on that side. Many such cases no doubt are due to operations in the nose, especially ill advised and ill executed galvanocautery applications, but some of them are due also to this condition of chronic diphtheria or membranous rhinitis, for in one of his cases, in spite of the very best attention, an adhesion did form between the lower turbinate and septum on one side which later had to be cut. We must recognize the multiform manifestations of diphtheria wherever there is a mucous membrane; and whenever a child continues to have a cold in the head with excoriations at the mucocutaneous surface and occasional nosebleed we must look on this condition with suspicion.

8. **Puerperal Sepsis.**—Carstens observes that in puerperal sepsis local treatment is of no benefit. Douches and intrauterine irrigation often do harm. Local abscesses should be opened and allowed to drain without irrigation. Constitutional treatment, on general principles, should be instituted, quinine and opium being the sheet anchor. Elimination in every direction should be assisted. The infecting organism should be identified and the opsonic index increased by antitoxines. Prevention should be our constant endeavor, a clean patient and clean doctors and midwives; this is most often secured by wearing rubber gloves.

9. **Chronic Influenzal Bronchitis.** — Madison reports six cases which he selected as illustrating different phases of chronic influenzal bronchitis.

11. **Appendicular Inflammation.** — MacCarty observes that of all appendices removed at operation 23.5 per cent. are partially or completely obliterated. The shortest duration of the process of obliteration when it is continuous is less than ten years, it does not occur as a physiological involutionary process, but is dependent on a definite inflammatory reaction. In a series of 2,000 specimens 0.6 per cent., or about 1 in every 175 appendices removed at operation, were malignant. In a series of 5,000 specimens 0.44 per cent., or about 1 in every 225 appendices removed at operation, were malignant. In a series of 2,000 specimens 2.2 per cent., or about 1 in every 40 partially or completely obliterated appendices, were malignant. In a series of 5,000 specimens 1.6 per cent., or about 1 in every 53 partially or completely obliterated appendices, were malignant. Carcinoma of the appendix may occur as early as 5 years of age and as late as 80 years of age. Of the carcinomata of the appendix found in his series 77 per cent. were not capable of being diagnosticated from the gross external appearance. All appendices with partially or completely obliterated lumina should be removed during operation for other abdominal conditions when it can be done without materially endangering the life of the patient.

MEDICAL RECORD.

August 6, 1910.

1. Hysteria under Psychoanalysis, By GEORGE M. PARKER
2. External Urethrotomy without a Guide, By C. L. GIBSON.

3. Vaccines in the Treatment of Various Bacterial Infections in Infants and Young Children. Preliminary Report, By E. Mather Sill.
4. A Theory as to the Origin of Leprosy, By John Atcherley.
5. Genesis of Hysterical States in Childhood, and Their Relations to Fears and Obsessions, By Tom A. Williams.
6. An Unusual Case of Congenital Absence of Anus and Lower End of Rectum, By Joseph Wiener.

2. External Urethrotomy without a Guide.—Gibson thinks that prompt relief should be given by performing external urethrotomy without a guide, aided, perhaps, by some expedients which he mentions. The posterior urethra having been opened, a guide can in the great majority of cases be easily passed from the posterior aspect of the stricture and the division of the stenosis completed *secundum artem*. A description of his technique is given.

3. Vaccines in the Treatment of Bacterial Infections in Children.—Sill's experience with vaccine treatment of bacterial infections in children extends over a period of six months, in which time he has treated forty-nine cases by means of vaccine. Of these thirty-nine were subacute or chronic otitis media, the ears having discharged from a few days to two years, local treatment having had only slight effect. There was one case of erysipelas in a child, one year of age, and one in an infant eight days old, two cases of multiple abscesses of the scalp, two cases of suppurating glands of the neck, two cases of pneumonia in babies, one case of gonorrhœal ophthalmia in a baby of three weeks, one case of acne of eight years' standing. Of the thirty-nine patients with otitis media twenty-eight were cured, ten improved while under treatment, and one did not improve. The patients with suppurating glands of the neck and multiple abscesses of the scalp were cured. In one case of pneumonia the vaccine apparently brought about a rapid cure as the crisis came on the third day of the disease, and in the other case there was marked improvement of the symptoms. The patients with erysipelas were cured. The patient with acne was cured after a period of six months, having received an injection of 800,000,000 *Staphylococcus aureus* each week; thirty injections were given in all. The patient with ophthalmia improved rapidly under a silver nitrate compound and gonococcus vaccine, and was apparently cured when last seen.

4. Leprosy.—Atcherley remarks that, in his opinion, leprosy is a chronic diathetic disease of gradual onset and irregular course, characterized by an inflammatory fibroid degeneration of the nerve tissue generally, which precedes the deposit of the lepra bacillus, and any other manifestation of the disease. The nerve degeneration is the direct consequence of defective pabulum supplied to it by the blood, which again is the result of improper food ingested by the individual. The theory is based on the fact that the pathological changes in leprosy bear a very remarkable and striking analogy to the corresponding changes in scurvy; and the position of the lepra bacillus is explained by that of the micrococcus, which in scurvy is found in chains along the track of the degenerated arterioles. This explains the suggestion of the term "scurvy theory." The incubation period supposed to exist in leprosy seems to be a myth. Leprosy has its varied points of onset within certain limits, but these are determined by the position of superficial nerves. The time, however, of contracting the disease cannot be known by inoculation, for no one ever really succeeded in inoculating leprosy; and if this theory is the real explanation of the disease, no one ever can. One might just as well try to inoculate scurvy. However strong the clinical evidence may be against the spread of leprosy by contagion, there is always the presence of the lepra bacillus and the hope of success in making cultures, or in inoculating an animal, to sustain the belief of a large majority in contagion. The conviction is with many of us hereditary, and dates from the times when numerous other diseases, undoubtedly contagious, were included under the term leprosy, and supposed to be leprosy, thus the signs of tuberculous disease of bones and skin, the manifestations of secondary syphilis, the various forms of ringworm, and malignant pustule —these are all contagious diseases which resemble leprosy enough to be mistaken for it.

BRITISH MEDICAL JOURNAL

July 23. 1910.

1. A Clinical Lecture on Duodenal Ulcer, By Guthrie Rankin.
2. Tubercle Bacilli in the Fæces in Tuberculosis, By R. W. Philip and Agnes Ellen Porter.
3. The Experimental Evidence for the Theory of the Neurogenic Coordination of the Heart Impulse, By H. Kronecker.
4. Notes on Twenty-eight Cases of Mongolian Imbeciles: with Special Reference to their Ocular Condition, By F. H. Pearce, R. Rankine, and A. W. Ormond.
5. Some Examples Illustrating Cases of Chronic Toxæmias at Vittel, By H. J. Johnston-Lavis.
6. Scarlatina Maligna, By Arnold Gregory.
7. Recurrent Monstriparity, By E. Napier Burnett.
8. Turpentine Enemata in the Treatment of Enteric Fever, By W. J. J. Arnold.

2. Tubercle Bacilli in the Fæces.—Philip and Porter have examined 109 different specimens. Of these, ninety-nine were from patients suffering from pulmonary tuberculosis, in different stages of the disease, in the Royal Victoria Hospital for Consumption. None of the patients had intestinal tuberculosis. The others were from patients in the Royal Infirmary, one from a case of tuberculous peritonitis, and the others from patients without a suspicion of tuberculous infection. Of the 109 persons, only thirty-four had sputum in which tubercle bacilli had been discovered; forty-two had sputum in which no bacilli were found, and twenty-four had no sputum whatever. Of the 100 tuberculous cases examined seventy-nine were found to yield tubercle bacilli, and only twenty-one were negative. Of the nine specimens from presumably normal subjects none yielded tubercle bacilli. Of the tuberculous patients, all those with bacilli in their expectoration, with one exception, presented tubercle bacilli in the fæces. Of the forty-two cases in which bacillary examination of the sputum was negative, twenty-nine gave tubercle bacilli in the fæces. Of the twenty-four cases without sputum seventeen showed bacilli in the stools. These results are striking, concludes the authors, and are suggestive in regard to clinical diagnosis, and to the larger aspect of preventive medicine. Thus it may be stated with absolute certainty that the occurrence of tubercle bacilli in the fæces is indepen-

dent of the presence of an intestinal lesion. Indeed, their presence has little reference to abdominal tuberculosis. They were actually absent from the only case of tuberculous peritonitis which was examined. The remarkable frequency of their occurrence in relation to pulmonary tuberculosis, not only in cases in which tubercle bacilli were determinable in the sputum, but also in cases in which either bacilli were absent or there was no sputum whatever, would seem to afford an important addition to our means of diagnosis in doubtful cases of pulmonary tuberculosis. From the public health point of view, the almost unfailing presence of tubercle bacilli in the fæces—the presumption is that in some of the negative cases in the present series more minute examination would have discovered them—raises questions as to the need for disinfection of stools, more especially in the case of bedridden individuals, such as has hitherto not been thought necessary. Further, if, in the Royal Victoria Hospital where swallowing of sputum is carefully guarded against, tubercle bacilli are found to occur so constantly in the stools of the patients, whether expectorating bacilli or not, it may be assumed that in the great proportion of untreated cases, where swallowing is often the rule, the number of tubercle bacilli discharged in the fæces will be vastly greater.

8. Turpentine Enemata in Enteric Fever.—Arnold administers, by the bowel, oil of turpentine and olive oil from the first day of treatment, at stated intervals, until the temperature has been normal for at least ten days. When the case first comes under observation, an enema of oil of turpentine, one ounce, and olive oil, one pint, is given by a funnel and tube; and, the foot of the bed being well raised, the emulsion is allowed to find its way slowly up the bowel. On the next day, or the day after, the same quantities are repeated. In most instances the amount of oil of turpentine may then be reduced to one half ounce, with olive oil, fifteen ounces; this is administered on alternate days throughout the whole course of the disease, and continued until convalescence is fairly established. A preliminary thorough cleansing of the bowel by a dose, or preferably small divided doses, of calomel, followed by castor oil, prepares the ground for the action of turpentine. The dose may be repeated more than once if necessary, alternating with the enemata. The average intestinal tract contains an enormous amount of toxic matter, and after this has been got rid of it should not be permitted to reaccumulate. The oils of turpentine and olive effectually prevent any accumulation. Under the influence of turpentine abdominal fullness is perceptibly reduced, and very soon the abdomen presents a hollow surface, especially in the region of the iliac fossæ and hepatic and splenic flexures. It should be our aim to maintain this condition. With such physical signs we may be sure that bacillary activity and toxine manufacture is at its minimum, and this opinion is confirmed by the entire absence of unfavorable symptoms. Headache is never complained of after the second day; the tongue cleans early and remains moist, and patients, as a rule, express themselves as feeling quite well, their most serious trouble being an early desire for "something to eat."

LANCET.

July 23, 1910.

1. An Exercise on Heart Disease, By NORMAN MOORE.
2. Epilepsy, By WILLIAM ALDREN TURNER.
3. On Ferrosilicon, with Special Reference to the Poisonous Gases Liable to be Evolved Therefrom, By H. WILSON HAKE.
4. On the Notification of Consumption, By the Right Hon. R. FARQUHARSON.
5. A Case of Dermatomyositis which Recovered, By N. C. GWYNN and W. GORDON.
6. An Examination of the Blood Serum of Idiots by the Wassermann Reaction, By H. R. DEAN.
7. The Medical Proposals of the Minority Report: An Appeal to the Medical Profession, By H. BECKETT-OVERY, SOMERVILLE HASTINGS, and ARNOLD FREEMAN.
8. Tuberculosis in its Relation to the Generative Functions, By JAMES T. R. DAVISON.
9. A Case of Suppurative Perichondritis of the Larynx in the Course of Acute Pneumonia; Recovery, By JAMES COLLIER and HAROLD S. BARWELL.
10. Brief Notes on the Treatment of Rheumatism by Bee Stings, By F. H. MABERLY.

1. An Exercise on Heart Disease.—Moore believes that endocarditis is an essential part of rheumatic fever, and that it would be useful to regard every case of chorea as belonging to the same species of disease as rheumatic fever. It is well worth while to watch cases of chorea over long periods, taking the temperature constantly and listening to the heart often. To decide whether the pericardium is adherent to the heart or not is a matter of great importance in relation to prognosis. A child with an adherent pericardium will very rarely live to grow up. This is most likely due to the interference with the general nutrition as well as with the muscular movement of the heart wall. The pericarditis of rheumatic fever is always accompanied by endocarditis and often in addition by well marked valvular disease, the result of past endocarditis. Often the fact that the patient, though young, and with every advantage of nutrition and care, does not ever begin to recover from the effects of valvular disease is evidence, inconclusive perhaps, yet the best to be obtained, that he has an adherent pericardium.

2. Epilepsy.—Turner, in his third Morison lecture, speaks of the treatment of epilepsy. Bromide medication may arrest the seizures immediately, or within a short period of the administration, temporarily or permanently; it may induce a lessening in the severity and frequency of seizures; or it may exert no influence at all upon the disease, or may even augment the frequency or severity of the seizures. Bromide treatment should be commenced at the earliest possible time after the onset of the fits, as there is a greater prospect of arrest or improvement during the first five than during the second five years of the disease, although arrest of the seizures may occur after a duration of twenty years. The administration of the bromides should be continued for a period, the duration of which is to be determined by the study of each case separately, but should not be less than two years. The dose usually given is too large. If benefit does not follow a daily dose of from 45 to 75 grains of one or a combination of the bromide salts, some other remedy or method of treatment should be sought for and applied. The large doses sometimes prescribed—from 100 to 150 grains daily—although no

doubt suppressing the seizures for a time, induce other and more serious phenomena—viz., those of bromism. Moreover, the bromides have an accumulative action. The potassium, sodium, strontium, and ammonium salts are the most usually administered. Each is of value, but the sodium salt is the most efficacious. If the bromides are prescribed in combination the dose should not exceed 60 grains in the twenty-four hours. The bromide of strontium is less useful, but may be given in smaller doses, or in combination with one of the other salts. Combinations of the bromide salts, with other remedies, which may have some influence either upon the nervous or circulatory systems, have been from time to time recommended, and are found useful in some cases. A combination of the bromides and digitalis has been found very satisfactory in cases with low arterial tension, irregular action of the heart, or failing compensation with valvular disease. Chloral hydrate may be added with great advantage in cases of prolonged serial epilepsy, or of the status epilepticus. The bromides and the glycerophosphates form a valuable combination in weak or debilitated cases, more especially in young women with anæmia or neurasthenic symptoms. A combination of a bromide salt with borax has been of service where the bromides or borax separately have been of little use. The author then mentions borax, belladonna, the zinc salts, strychnine, the calcium salts, etc.

3. Ferrosilicon.—Hake says that ferrosilicon is a physicochemical alloy of iron and silicon which is employed in the manufacture of steel. Silicon has a high calorific value and acts as a metallurgical fuel; hence, by causing molten steel to remain fluid for a long time it enables thin and intricate castings to be made, and by its reducing action it prevents the formation of blowholes in castings. The addition of silicon to steel imports to it, among other valuable physical properties, a high tensile strength when present to the extent of rather less than 1 per cent., together with small proportions of carbon and manganese. Hence, silicon steels are used in motor car construction. The proportion of silicon in ferrosilicon varies from 10 per cent. to 96 per cent. When the proportion of silicon is under 25 per cent. the alloy is known as low grade, while when it is above 25 per cent. the alloy is called high grade ferrosilicon. It has been discovered, and the facts have only gradually come to light, that high grade ferrosilicon is liable to evolve gases of a deadly poisonous nature when brought into contact with water, or even when exposed to the action of moist air. Certain impurities originally present in the coal, iron, and quartz used, or formed from them during the process of manufacture, are always present, and some of these, although amounting to a very small percentage of the finished product, are the ultimate cause of the serious mishaps which have arisen from the extended use of ferrosilicon. These impurities are: Calcium phosphate, arsenic, acetylene, silicicuretted hydrogen, etc. Our author has examined sixty-four samples of all grades of silicon and has classified them in three groups: Class I., 10 to 30 per cent. silicon, containing practically no poisonous impurities and not liable to spontaneous disintegration. Class II., 70 to 96 per cent. silicon, not entirely free from poisonous impurities but also not liable to disintegrate spontaneously. Class III., 35 to 60 per cent. silicon, containing, in most instances, a considerable proportion of poisonous impurities and in addition being more or less liable to spontaneous disintegration.

PRESSE MEDICALE.

June 1, 1910.

1. Eclampsia and Morphine, By Jules Bouvier and Laffont.
2. Traumatic Aseptic Thrombophletitis, By M. Lahaussois.

1. Eclampsia and Morphine. — Bouvier and Laffont report two cases of eclampsia treated with morphine in which recovery was more rapid and complete than without the drug. They gave, during convulsions, hypodermic injections of morphine of 0.01 centigramme, to be repeated if necessary from three to five times a day, at three or four hours interval. At the same time chloroform should be inhaled and the stomach and intestine should be copiously washed out. This form of treatment has been used by Dedericks in 1886, on sixteen women, all recovering.

June 4, 1910.

1. Paroxysmal Hæmoglobinuria in the Horse as Sequela to Chilling, By Adrien Lucet.
2. Ptosis of the Cæcum, By Georges Lardennois.
3. Lesions and Pathogenesis of Microcystic Degeneration. By Emile Forgue and Georges Massabuau.
4. Ethyl Chloride in Prolonged General Anæsthesias, By Poureau.

2. Ptosis of the Cæcum.—Lardennois finds that ptosis of the cæcum occurs oftener in races which are accustomed to heavy eating and drinking. Certain causes are favorable to development of ptosis of the cæcum, such as chronic constipation, certain size of the pelvis, poor support by the psoas muscle, the use of corsets, etc. It is, therefore, oftener found in women than in men. The attacks appear usually very suddenly. The pain, the distention, the sensation of dragging down, are usually noticed below McBurney's point, sometimes more in an outwardly direction, but always near the spinous processes of the ilium. Upon examination of the painful region fluctuation can be noticed, the palpation of the cæcum gives the sensation of a soft fluctuating tumor, which, upon percussion during a painful attack, shows dulness with gurgling sounds when the attack subsides, like borborygmus. The pathognomic sign he describes thus: When the contents of the transverse and ascending colon are pushed back toward the cæcum, pain in the right pelvic region is produced; while the pain will disappear when the contents of the prolapsed cæcum are gently pushed from below upward toward the colon. In milder attacks the ptosis is relieved by dietetic measures, scrupulously adhered to, by laxatives, massage, and exercise of the abdominal muscles. Operation is indicated in severe cases when the cæcum is to be fastened in the iliac fossa.

June 11, 1910.

Sudden Variations in the Number of Leucocytes through Arterial Pressure, By Jean Camus and Ph. Pagniez.

June 15, 1910.

Recent Researches on the Origin and Development of the Lymphatic Vessels. By F. Jolly.

July 18, 1910.

1. Importance and Cycle of Evolution of the Islands of Langerhans in the Normal and Pathological Physiology of the Pancreas, especially in Diabetes, By E. Laguesse.
2. Ætiology and Pathogeny of Syphilis and Sciatica, By Jacob Lortat and Sabaréanu.
3. Contribution to the Study of the Resistance of the Blood Corpuscles in Icterus, By J. Chalier.
4. On the Pathogenesis and Treatment of Hernia of the Large Intestine, By René Leriche.
5. Emetics in Paroxysmal Tachycardia, By E. Devic and Paul Savy.

2. Syphylis and Sciatica.—Lortat and Sabaréanu think that syphilis plays an important rôle in the ætiology of sciatica. Many cases of sciatica will yield to a specific treatment of syphilis.

June 22, 1910.

1. Ascitic Fluid in Autotherapeutics, By Germain Roque and Victor Cordier.
2. Treatment of Staphylococcic Skin Diseases by Staphylococcic Vaccine, By A. Manté.
3. Contribution to the Technique of Examinations of the Fæces for Typhoid and Paratyphoid Bacilli, By A. Sicre and E. Combe.

1. Ascitic Autoserotherapeutics.—Roque and Cordier have not been successful with autoserotherapeutics in ascites.

2. Staphylococcus Vaccine in Staphylococcic Skin Diseases.—Manté has collected 150 observations of the treatment of furunculosis with staphylococcus serum, and reports very favorable results.

June 25, 1910.

1. Catheterization of the Ureters and Intravesical Distinction of the Urine, By Heitz Boyer.
2. Physiological Bases of Medical Electricity, By A. Zimmern and Paul Cottenot.
3. Painful Spots in the Abdomen in Chronic Appendicular Inflammation, By Jacques Silhol.
4. The Ciliary Ganglion as the Peripheral Centre of Papillary Reaction to Light and the Argyll Robertson Phenomenon, By A. Marina.
5. Pityriasis According to Sabourand's Theory, By M. E. Lenglet.

5. Pityriasis.—Lenglet speaks very favorably about the treatment of pityriasis as laid down by Sabourand in the third volume of his well known work *Maladies du cuir chevelu.*

June 29, 1910.

Kidney Transplantation, By E. Villard and L. Tavernier.

SEMAINE MÉDICALE

June 1, 1910.

A New Method for Examining the Function of the Stomach, By E. Fuld.

June 8, 1910.

Subacute Septichæmia from Eberth Bacillus, By Victor Audibert.

June 15, 1910.

Dilation of the Stomach from a Lesion in the Peritonæum or Stomach Wall, By J. Paviot.

June 22, 1910.

Heredity as an Ætiological Factor in Cancer, By R. de Bovis.

June 29, 1910.

Spasmodic and Interspasmodic Chronic Ileus, By L. Cheinisse.

BERLINER KLINISCHE WOCHENSCHRIFT

July 4, 1910.

1. The Treatment of Syphilis with Dioxydiamidoarsenobenzol, By W. Wechselmann.
2. The Recognition of Syphilis and of Its Activity by Experimental Injections of Mercury, By Felix Glaser.
3. Albumenoids and Fatty Degeneration of the Liver, By Georg Rosenfeld.
4. Prophylaxis of Caisson Disease, By A. Bornstein.
5. What Organic Changes Are Caused by Large Subcutaneous Infusions of Common Salt? By Sofus Wideröe.
6. Endobronchial Therapy, By A. Ephraim.
7. A New Method for the Treatment of Functional Vocal Disturbances, together with Remarks Concerning Their Pathology and Therapy, By Theodor S. Flatau.
8. The Quantitative Proportion of Diastasis in the Human Blood and Its Relation to Diabetes Mellitus, By O. J. Wynhausen.

1. Dioxydiamidoarsenobenzol.—Wechselmann states that this remedy acts upon the symptoms of syphilis in all its infectious forms with a rapidity and thoroughness only approximately met with in any other known remedy.

2. Detection of Syphilis by Injections of Mercury.—Glaser remarks that in cases of latent syphilis with positive Wassermann reaction if one or more injections of mercury induce a fever lasting from one to three days spirochætæ are present in the body and antisyphilitic treatment is indicated. But no conclusion can be drawn from the failure of the injections to induce a fever as this does not prove absence of the spirochætæ.

5. Organic Changes Induced by Large Subcutaneous Injections of Salt Solution.—Wideröe finds that rabbits die after a certain length of time varying in the individual cases, as the result of large subcutaneous injections of salt solution. The post mortem examinations revealed dilated and flabby hearts in which subendocardial and muscular hæmorrhages were to be seen together with minute yellow endocardial striæ. In the other organs were capillary hyperæmia, small hæmorrhages, and parenchymatous degeneration. The size of the heart had not been changed by the injection. These results are noteworthy because it has been generally accepted that the injection of physiological salt solution is not provocative of any harmful effect.

8. Diastasis and Diabetes Mellitus.—Wynhausen finds that the quantity of the diastatic ferment in the blood fluctuates greatly, from 12.5 to 125 in nondiabetic patients, from 12.5 to 80 in diabetics. The average in fifty-seven nondiabetic patients was 34.87, in thirty-one diabetic 33.3, too minute a difference to permit any conclusions to be drawn. He is unable to demonstrate any distinct relation between diabetes mellitus and the quantity of diastasis in the blood.

MEDIZINISCHE KLINIK.

July 10, 1910.

1. Pseudoputrid Processes in the Air Passages, By Hermann Eichhorst.
2. Warmth Regulation in Baths, By Alois Strasser.
3. The Focal Reaction of the Subcutaneous Tuberculin Test and Its Importance in the Early Diagnosis of Tuberculosis of the Apex of the Lungs, By M. Otten.
4. The Therapeutic Importance of Scopolamine, By Max Cremer.
5. Torsion of the Great Omentum, By Ernst Schuemann.
6. The Early Diagnosis of Cancer of the Stomach. Salomon's Test and Hæmolysin in the Gastric Juice and Carcinoma of the Stomach, By E. Fraenkel.
7. The Indications for the Different Preparations of Mercury, By Fritz Juliusberg.
8. Family Tetany, By Coler.

9. An Obstetric Binder, By Josef Hirsch.
10. The Theory of Fibrin Staining, By Karl Lenhoff.
11. A New Bacteria Filter, By Oskar Frankl.
12. A Modified Petri's Dish, By Oskar Frankl.

1. **Pseudoputrid Processes in the Air Passages.**—Eichhorst states that a fœtid breath and putrid expectoration may be present in cases in which the bronchi and lungs are not immediately involved in decomposition, and gives to these cases the name "pseudoputrescence of the air passages." He describes three causes of such a pseudoputrescence; stagnation of the sputum in the bronchi; the rupture of a pleural empyema into the lungs; and the escape of putrid gases into the lungs from a pleural empyema that has not ruptured.

3. **The Early Diagnosis of Tuberculosis of the Apex of the Lungs.**—Otten concludes that the physical examination, particularly percussion and the x ray examination, gives us accurate information concerning the position and extent of the diseased focus in tuberculosis of the apex of the lungs, but is unable to determine the activity or inactivity of this focus. The latter question is decided best by the focus reaction of Koch's subcutaneous test. The puncture reaction and the general reaction of the subcutaneous test cannot decide this question with certainty or with sufficient regularity. If the treatment is to be made dependent on the result of the specific tuberculin test the focus reaction is decisive.

4. **Scopolamine.**—Cremer pronounces scopolamine to be a valuable sedative in patients with motor restlessness, a valuable anæsthetic in combination with morphine for the performance of minor operations, and, also in combination with morphine, the best means for relieving the pains of labor. The solutions should always be freshly prepared.

8. **Family Tetany.**—Coler reports in detail the clinical histories of two sisters who were afflicted with tetany.

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT.

July 5, 1910.

1. Studies of Chlorosis, By Morawitz.
2. The Treatment of Syphilis with the New Preparation of Arsenic of Ehrlich-Hata, By Schreiber and Hoppe.
3. The Method of Cultural Examination of the Blood, By Meyerstein and Rosenthal.
4. The Influence of the Infusion of Senna on the Movements of Digestion in Man, By Stierlin.
5. Foerster's Operation, By Codivilla.
6. The Treatment of Tabetic Crises by Resection of the Posterior Roots, By Floercken.
7. A New Theory of Narcosis, By Buerker.
8. Excretion of Radium in the Urine, By Ramsauer and Caan.
9. The Application of Radium in Rheumatic Diseases, By Goerner.
10. The Formation of Beta Oxybutyric Acid in the Animal Organism, By Dakin.
11. Drug Exanthemata as Impressions of Idiosyncrasies and Anaphylaxia, By Klausner.
12. Simple Methods for the Rapid Staining of Living Spirochætæ, By Meirowsky.
13. Two Cases of Slight Gangrene after the Use of Grossich's Method of Disinfection, By Hindenberg.
14. A Case of Pouchlike Dilatation of the Parotid Gland, By Henssen.
15. The Use of Metallic Spiral Threads as a Substitute for the Rubber Tube with Artificial Anæmia, By Blecher.
16. A Sterilizable Thermometer Case, By Konrich.
17. The Growth of the Eye after Cataract Operations Performed in Childhood, By Wessely.
18. The Action of the X Rays upon Tumors (*Concluded*), By Werner and Caan.

1. **Studies of Chlorosis.**—Morawitz formulates the results of his studies of chlorosis thus: 1. There are marked cases of chlorosis in which the condition of the blood is normal, or nearly so. Such cases are not rare. The influence of iron is just as favorable in these cases as in those associated with distinct anæmia. 2. Anæmia is therefore not the cardinal symptom of chlorosis, but only one symptom among others. 3. The disturbances of menstruation, venous murmurs, water retentions, and the majority of the subjective symptoms met with in chlorosis are not always dependent on an anæmia. 4. It is improbable that the curative action of iron in chlorosis is to be ascribed to a stimulative effect upon the blood forming organs, in particular to a stimulative effect upon the formation of hæmoglobin. The uselessness of iron in almost all nonchlorotic anæmias, as compared with arsenic, aside from other observations, is an evidence against the existence of such a stimulative action. 5. The point of attack of the iron in chlorosis is to be sought not in the blood forming organs alone, but also in the as yet unknown root of the disease.

2. **The Treatment of Syphilis with Ehrlich-Hata's New Preparation of Arsenic.**—Schreiber and Hoppe consider that this remedy exerts a specific action against syphilis which is exhibited after a single injection, and that in the doses which they have used it is nonpoisonous, as they have seen no unpleasant after effects. It is contraindicated in serious diseases of the circulatory organs, of the kidneys, and of the eyes, as well as in all general diseases and cachexiæ.

4. **The Action of Infusion of Senna.**—Stierlin has studied the action of infusion of senna by means of röntgenographs and has arrived at the following conclusions: The infusion of senna acts only on the peristalsis of the colon; it has little or no effect upon the peristalsis of the stomach or of the small intestine. As soon as the infusion of senna enters the cæcum and ascending colon an evacuation of almost the entire contents of the colon takes place: this evacuation is repeated several times as long as any of the senna remains in the colon or in the cæcum.

5. **Foerster's Operation.**—Codivilla reports a case in which he performed Foerster's operation of resection of the posterior nerve roots in spastic paralysis. The condition of the patient appeared to be about the same after as before operation, but he asserted that he felt better, and careful examination showed that the spinal reflex irritability was distinctly diminished, the voluntary movements were much freer, and the patient controlled his movements much better.

6. **The Treatment of Tabetic Crises by Resection of the Posterior Roots.**—Floercken has had recourse to the same operation for the relief of the pain in tabetic crises and reports a case in which he obtained a good result.

8. **Excretion of Radium in the Urine.**—Ramsauer and Caan find that when a radioactive substance has been introduced into the organism a constant excretion of a radioactive substance takes

place in the urine in such quantity as to remove the material from the body within a conceivable time.

9. Application of Radium in Rheumatic Diseases.—Goerner states that he undertook this form of treatment with great optimism, but his results were very modest as compared with the majority of cases that have been reported.

17. The Growth of the Eye after Cataract Operations Performed in Childhood.—Wessely has observed that the size of the cornea of an eye containing a lamellar cataract which has not been operated on is normal while that of one which has been operated on in childhood is decidedly smaller than normal. This condition is indicative of a marked backwardness in the development of an eye after an operation for cataract in childhood.

18. The Action of the X Rays upon Tumors.—Werner and Caan conclude that operable tumors should be removed surgically under all circumstances and that x ray treatment should be used as an after treatment, even when other aids, such as fulguration or thermopenetration, are employed. The irradiation of an open wound seems to act more efficaciously than the percutaneous irradiation of the field of operation.

WIENER KLINISCHE WOCHENSCHRIFT.

July 7, 1910.

1. Ætiology of Enteritis Follicularis Suppurativa, By Heinrich Albrecht.
2. Œdema after the Operation for Stenosis of the Pylorus, By A. Jianu.
3. Tonsilectomy, By Siegfried Tenzer.
4. A Spiral Test Method with the Pencil for the Delimitation of Places in the Skin Anæsthetic or Hypæsthetic to Touch, By Max Loewy.
5. Medullar Anæsthesia According to Ionescu, By P. de Favento.
6. Stenosing Rectovaginal Carcinoma with Suppurating Carcinomatous Glands in the Groin; Incarcerated Crural Hernia, By F. Goldschwend.
7. History of Hæmostasis in Ancient Times and the Middle Ages, By Eduard Felix Heeger.

1. Ætiology of Enteritis Follicularis Suppurativa.—Albrecht gives the bacteriological examination of a resected portion of the intestine, comprising part of the lowest portion of the ileum, the cæcum with the appendix, and some of the ascending colon, removed from a boy fifteen years old, who had been supposed to be suffering from appendicular inflammation. The pathological condition found was very peculiar and the exciting microorganism was found to be the *Bacterium pseudotuberculosis rodentium* which has hitherto been met with only in the gnawing animals. This is the first case on record in which this microorganism has been demonstrated to be the cause of a serious ulcerative inflammation of the intestine in a human being.

2. Œdema after the Operation for Stenosis of the Pylorus.—Jianu reports three cases of this nature in which he was able to exclude the usual causes of œdema of the lower limbs, such as cachexiæ of chlorosis, tuberculosis, and cancer; general diseases, including constitutional dystrophies, toxic and infectious diseases; diseases of the nervous system following vasomotor disturbances: diseases of the liver and heart, following mechanical disturbances of the central or peripheral apparatus; and diseases of the kidney. He is inclined to ascribe the œdema in these cases to a delay in the restoration of the excretion of chlorides from the system.

3. Tonsilectomy.—Tenzer describes the technique of the removal of the tonsils by means of the snare, and recommends the operation as indicated in every case of chronic purulent disease of the tonsil in adults in which the tonsils do not protrude between the pillars, but have caused recurrent attacks of angina and peritonsillar abscess, as well as in cases of protruding tonsils in which conservative treatment has not proved efficient. The patient should not be allowed to return home after the operation, but should be kept where every means for hæmostasis is present.

7. Hæmostasis in Ancient Times.—Heeger commences with the means employed in the Græco-Trojan war, speaks of Achilles's lance and the knot of Hercules, and refers freely to the works of Hippocrates, Aristotle, Galen, and other ancient writers. The styptic of Achilles's lance was iron rust, the nature of Hercules's knot is uncertain. The prescription of Galen for a styptic plaster seems worth quoting:

℞ Picis, ceræ, bituminis terebinthinæ, ...āā libr. un.;
Mannæ, chalcanth. arist. long., ...āā unc. quatuor;
Malicorni, gallæ immatur., alvis usti, ...āā unc. ii;
Spinæ et aristolochiæ rotundæ, ...āā unc. iv;
Aceti et olei veteris, ...āā unc. dim.

EDINBURGH MEDICAL JOURNAL.

July, 1910.

1. Discussion on the Artificially Prepared Hypnotics, Their Use and Possible Abuse, By Francis J. Boyd.
2. Early Knowledge Regarding Phthisis, By John D. Comvie.
3. The Coagulation Time of the Blood in Disease, By T. Addis.

3. Coagulation Time of Blood in Disease.—Addis remarks that the number of cases which he has examined is too small to permit of any wide conclusions being drawn as to the effect of disease on coagulation, but one striking fact is at any rate clear, namely, that in spite of extreme morphological, physical, and chemical alterations in the blood, the coagulation time may nevertheless remain normal. As regards the cause of those abnormities of coagulation which were observed in nonbacterial diseases, nothing can be said. The first step toward such knowledge would have to be the establishment of the constancy of these changes, or if they were inconstant, the search for the conditions under which they appeared. But in bacterial diseases it may be concluded that no marked effect is produced unless the organisms are actually present in the blood. When this occurs, the typhoid bacillus and the pneumococcus hasten coagulation, while streptococci and staphylococci delay it. Autoagglutination of the red blood corpuscles was seen in varying degree in all acute bacterial infections, except typhoid. It was most marked in cases of staphylococcal and streptococcal septichæmia and pyæmia. Moderate loss of blood has no effect on coagulability, but very large hæmorrhages are followed by an acceleration of coagulation.

DUBLIN JOURNAL OF MEDICAL SCIENCE.

July, 1910.

1. Some Remarks on Dyspepsia, By G. A. Moynihan.
2. Our Responsibilities in the Prevention of Inherited Syphilis; with Illustrative Cases, By Spencer Sheill.
3. Clinical Reports of the Rotunda Hospital, By E. Hastings Tweedy.

1. **Dyspepsia.** — Moynihan speaks of three forms of dyspepsia, the origin of which in organic lesions has now been conclusively demonstrated, acid dyspepsia, flatulent dyspepsia, and appendix dyspepsia.

3. **Clinical Report of the Rotunda Hospital.**— Tweedy gives the report of the Rotunda Hospital in 1908-9. There were 2,369 admissions to the maternity wards and 2,045 deliveries. He speaks of eclampsia, contracted pelvis, and the treatment of premature children.

AMERICAN JOURNAL OF SURGERY.

August, 1910.

1. A Plea for Conservatism in Some Gynæcological Conditions, By James P. Glynn.
2. Some Remarks on Hæmorrhoids, By Jerome M. Lynch.
3. Fractures of the Spine, By Carl Sawyer.
4. Local Anæsthesia, By Arthur E. Hertzler.
5. The Open Air Treatment of Burns, By David St. John.
6. A Case of Cholelithiasis in a Patient Twenty-one Years of Age, By Albert E. Sellenings.
7. Rapid Synchronous Double Amputations. Report of Eight Cases with Seven Recoveries, By W. L. Cuddeback.

5. **The Open Air Treatment of Burns.**—St. Johns favors open air treatment of burns. The object of the open air method of treatment is to cause as little pain as possible, and to avoid interference with the natural reparative processes which Nature best accomplishes in these cases. The advantage is that it does away almost entirely with extensive dressings, which are more or less painful, interfere mechanically with growth of granulation tissue, and cause destruction of the granulations themselves, by bleeding, etc. Furthermore, the danger of keeping pus and exudate back in the tissue is obviated. If the posterior portion of the body is chiefly involved, the patient is placed upon a water bed, without attempting even to clean the skin or in any way further disturb the patient. In warm weather he can be left thus exposed to the air, and preferably the sunlight, covering only those portions of his body as are necessary. In winter, cradles are placed over him, and over these are spread blankets, leaving the body untouched; the face is left exposed, and the tentlike cover is so arranged as to fit snugly about the neck. This arrangement can be modified by using glass elevated over the burn, in combination with the blanket covering, thus making use of sunlight, even when the temperature of the ward requires suitable covering. Flies may be excluded by the usual canopy netting stretched over the bed.

7. **Rapid Synchronous Double Amputations.**— Cuddeback reports eight cases with seven recoveries of synchronous double amputations. Of the sixteen amputations on these eight patients, one was of an arm, three were of a forearm and hand, two were of a shoulder, including portions of the scapula, five were of the leg, and five were of the thigh, of which one case was double thigh. He believes that the results are more favorable than are usually secured, and that they are due to the operative methods, which may be stated as follows: Thorough preparation of all details of arrangements for emergencies before the operations. Rapid synchronous amputations. Persistent, aggressive after treatment. In detail, these comprise a skilled anæsthetist with trained assistants, who administer the medication and the anæsthesia, having at hand stimulants — alcohol, strychnine, nitroglycerin — oxygen, adrenalin, and normal salt solution, which may be used subcutaneously by the quart to great advantage. Heat in dry form is preferred. Two surgeons operate simultaneously. After the application of the tourniquets, Esmarch, or other means of preventing hæmorrhage, each surgeon operates independently. With his own assistants, nurses, instruments, trays, solutions, and dressings, he proceeds regardless of the other, ignoring his presence, and amputates rapidly. Transfixion of a limb is preferable, forming skin and muscle flaps where possible. To arrest hæmorrhage torsion is preferred, making complete rupture in each case of the two internal arterial coats. One can feel them giving away. Capillary hæmorrhage is arrested by the application of very hot towels, sponges, etc. For this rapid work, he has found the use of the continuous, overhand, long silk suture the most satisfactory method of closing the wound, leaving only a small gauze tent at the most dependent part. This is followed with the usual gauze and cotton dressings, and the patient is placed in bed as quickly as possible. During the operation, medication and stimulation are used as needed. After the operation these are continued and repeated as occasion may require, also hot saline enemata, hot water, hot milk, and liquid nourishment by mouth frequently. The time of the operation is minimized and thereby the shock lessened. Occasionally no radial pulse is perceptible for days, but medication and stimulation are continued both hypodermatically and by the mouth. Transfusion of blood is serviceable. Compression of the lower limbs or of the abdomen by air compressors is another means of relieving shock by temporarily forcing the blood from those parts of the body.

Proceedings of Societies.

ASSOCIATION OF AMERICAN PHYSICIANS.

Twenty-fifth Annual Meeting, held in Washington, D. C., May 3, 4, and 5, 1910.

The President, Dr. Henry Hun, of Albany, in the Chair.

(*Concluded from page 292.*)

Peculiar Sickle Shaped Forms of Red Blood Corpuscles in a Case of Anæmia.—Dr. James B. Herrick, of Chicago, reported the case of a young negro, twenty years old, from British Guiana, who was suffering from a severe secondary anæmia of obscure origin, and in whose blood were found many red blood corpuscles of peculiar sicklelike shape. Some were nucleated. He had had yaws and for three years suffered from weakness, dyspnœa, jaundice, etc. He gave no venereal history. He had a "cold," with cough and rise of temperature, was dizzy, and had a bronchial catarrh and acute rhinitis. He had adenopathy and the scars the result of his yaws. There was an enlargement of the left ventricle and a systolic murmur. The spleen and liver were not enlarged. His temperature occasionally went to 101° F. The examination of the urine showed a trace of albumin, a few casts, no

hæmatoporphyrin, no paramidophenol. The red cells numbered 2,570,000, hæmoglobin was forty per cent., and the white cells numbered 40,000. The white blood count showed the polymorphonuclears to be seventy-two per cent., the large mononuclears seven per cent., the small fifteen per cent., eosinophiles five per cent. In the stools two eggs of hookworm were found and he was given thymol in the usual manner. He also ordered for him iron iodide and rest. The patient soon improved. One year after the first examination, the examination of the blood showed the number of red cells to be 2,700,000, the white cells, 30,500, the hæmoglobin fifty-five per cent. There was practically the same blood picture, with an eosinophilia of seven per cent.

Pernicious Anæmia.—Dr. ALEXANDER MCPHEDRON, of Toronto, reported a case in which there was an apparent complete recovery of sixteen years from a previous attack.

Dr. GEORGE DOCK, of New Orleans, said that in the spring of 1889 he was consulted by a farmer, sixty-two years old, who had a very severe and typical pernicious anæmia. His general condition was so bad that Dr. Dock gave a gloomy prognosis. However, to satisfy the family, he ordered for him Fowler's solution of arsenic, and he suddenly got better, and, so far as he now knew, was well. These remissions in pernicious anæmia were interesting features of the disease, and, curiously enough, were not always recognized. Dr. Dock knew of one patient being presented to three different medical societies by three different medical men as having been cured of pernicious anæmia.

Dr. HERRICK had had one case in which there was an interval of seven years during which the patient was able to do a full day's work at his calling; he was a carpenter.

Dr. WILLIAM S. THAYER, of Baltimore, said he had seen but one such case, and the remission was about four years and a half.

Dr. FREDERICK C. SHATTUCK, of Boston, had seen but one case, and this followed confinement. The blood picture was absolutely typical, and the examination was made by Dr. Cabot. This patient recovered.

Experimental Cardiorenal Lesions.—Dr. H. A. CHRISTIAN, Dr. R. M. SMITH, and Dr. I. C. WALKER, of Boston, made a report of a year's study of experimental cardiorenal lesions produced in rabbits by the injection of various drugs, such as uranium nitrate, arsenic, sparteine sulphate, and adrenalin chloride, with particular consideration of the histological changes produced in the heart and kidney. Among these lesions a proliferative type of pericarditis following hæmorrhagic exudation into the pericardial cavity was of particular interest. This lesion was associated with both myocardial and endocardial changes of a proliferative character.

The Frequency and Significance of Albumin in the Urine of Normal Children.—Dr. SAMUEL MCCLINTOCK HAMIL and Dr. H. D. BLACKFAN, of Philadelphia, presented a paper which was based upon the results of five hundred systematic analyses of the urine of children, and treated of the frequency of albuminuria in presumably normal children, and they discussed the relationship of such albuminurias to the various conditions upon which they were supposed to be dependent.

Dr. S. J. MELTZER, of New York, remarked that the mucous membrane of the gastrointestinal tract was more permeable in children than in adults, and this statement might apply to all the mucous membranes; they were all more permeable at the time of growth.

A Clinical Method of Estimating the Coagulation Time of the Blood.—Dr. ROBERT DAWSON RUDOLF, of Toronto, said that different methods had been employed for estimating the coagulability of the blood, but in all these methods no attempt had been or could be made to actually measure the time or extent of the coagulation of the blood when this was surrounded by normal tissues and was circulating in a normal manner, for under such conditions it did not coagulate at all. The aim was always the testing of the coagulability of the blood under certain unnatural surroundings, and as these surroundings differed in different methods, the results obtained could only be compared in the most general way. Thus, by one method healthy blood might coagulate in two minutes and by another in fifteen, and yet by each method the conclusion might be arrived at that the coagulation time was normal. Dr. Rudolf offered the following conclusions:

1. The chief object of this communication was to advocate a method of measuring the coagulation time of the blood, which was convenient clinically and which seemed to give reliable results. 2. The temperature at which the experiment was carried out made a marked difference in the results. This difference was about one minute for each degree Centigrade. At 20° C. the average coagulation time was about eight minutes and a half. 3. Age (beyond early childhood) and sex seemed to have no influence upon the coagulation time. 4. A diurnal variation did not seem to occur; possibly there was a slight increase in coagulability as the day advanced, but this was probably due to experimental error. 5. There appeared to be a slight tendency to decrease in the coagulability some two hours after a meal, but it was too slight to put much weight upon. 6. Calcium lactate did not appear to have any influence upon the coagulation of the blood. 7. Citric acid appeared to have a slight retarding influence upon the coagulation. 8. Considerable variation occurred in the coagulation time of a healthy individual from time to time, the nature of which was not evident.

Medical Uses of Rectal Infusions.—Dr. HENRY SEWALL, of Denver, made this preliminary report. From a theoretical point of view the following summary might be made of the distinctive vital relations of proctoclysis: 1. Rectal infusions would seem less disturbing to the economy than fluid offered to the body through any other channel. Fluid introduced into the lower bowel by the "Murphy method" produced a minimum of peristaltic reaction, and its absorption was probably regulated by the vital demands of the organism. 2. Warm rectal infusions had a diuretic effect, which was frequently immediate and intense. In certain cases the amount of fluid expelled from the body by diuresis greatly exceeded that introduced by protolysis. 3. Soluble toxines proceeding from foci of infection impaired the vital-

ity and reduced the resistance power of the healthy tissues through which they circulated. The surgeon had a lively sense of the gravity of this incident influencing tissue repair and general reaction after operation. The condition was no less important in medical cases. Dilution of the circulating toxines with imbibed fluid and their removal by diuresis would seem not only to protect the kidneys by lessening the concentration of the poisons excreted, but to safeguard the sound tissues from intoxication. 4. Clinical observation indicated that microbic metastasis was prone to seek out regions where tissues had already been injured by circulating toxines. Thus, in gonorrhœal infection there was reason to believe that joint pains due to transported toxines were apt to precede the local establishment of the cocci. Proctoclysis appeared to ameliorate such pains, and, inferentially, limited the extension of the infection. 5. The addition of foreign fluid to the circulation was an important aid in the maintenance of a normal blood pressure, possibly not so much by reason of the volume of fluid added as by reducing intoxication. 6. The administration of many medicines by way of rectal infusions commended itself as free from obvious disadvantages inherent to the oral channel.

As was well known, the essence of Murphy's method lay in the free communication between the rectum and the reservoir, with the hydrostatic balance so slightly in favor of the latter that, while fluid surely gravitated toward the bowel, a slight excess of pressure within the rectum was relieved by the reversal of the current into the reservoir. It was his habit to judge of the utility of the method by the reaction of the kidneys. Abundant diuresis had been accepted as a sign of the efficiency of the procedure, and *vice versa*.

The cases on which the article was based might be divided into two groups: 1. Those in which it was desired to raise arterial tension, or, by stimulating diuresis, to deplete an effusion. 2. Those in which it was endeavored to reduce a toxæmia. In the second class of cases there was a pertinent field for proctoclysis especially. In conclusion, it must be admitted that the favorable results accompanying the use of proctoclysis in appropriate medical cases indicated that the method of quasi internal hydrotherapy deserved such a thorough detailed study as would accurately establish its indications and limitations in medical therapeutics.

Fatal Sodium Chloride Poisoning, with a Brief Study of the Effects of Excessive Administration on the Tissues.—Dr. Harlow Brooks, of New York, said that the case had been reported to him by Dr. W. T. Bivings, of Atlanta, Ga. A young woman was operated on during the quiescent period for a chronic appendicitis. The operation was in every way successful and the patient left the table in twenty minutes, recovering from the anæsthetic in good condition after forty minutes, with the pulse, respiration, and temperature practically normal. A rectal enema composed of a pint of normal saline solution and half an ounce of whiskey was ordered, to be repeated every hour for three doses. One hour after the first enema the patient became quite restless and nervous and complained of thirst. At the second dose these symptoms became more exaggerated and she begged continuously for the bed pan. The condition was then reported to the surgeon. A third enema was, however, given before his arrival, when he found the patient unconscious; pulse small, 120; temperature, 101° F. The pupils were contracted and failed to react to light. The conjunctivæ were injected and tears were pouring from the eyes. The temperature rapidly rose to 109° (rectal); respiration became very rapid, shallow, and difficult; the pulse grew rapid and small; and she died about eight hours after leaving the table. Forty minutes before death she had a convulsive seizure lasting ten minutes. A few minutes before death about a quart of bloodstained gelatinous material was discharged from the gut. Respiration ceased five minutes before the cardiac and radial pulsations. No autopsy could be obtained. Urine had been frequently voided during the attack. It showed an average sp. gr. of 1.015, no sugar, no albumin.

Several days after it was discovered that the nurse, who had been chosen by the family, had, instead of normal saline solutions, given enemata of a nearly saturated solution. The patient had thus received nearly nine ounces of sodium chloride, and it was believed that this was the cause of death.

Rapid abstraction of fluid from the body caused dyspnœa, injection of the conjunctivæ, rapid and small pulse, high temperature and convulsions. The symptom group resembled that of hæmorrhage, except that there was no loss in red cells; it also simulated that of cholera asiatica.

Administration of concentrated salines produced symptoms precisely of this nature, presumably by taking fluids from the blood, lymph, and tissues and drawing them to the gut or stomach.

Toxæmic Jaundice. — Dr. David Riesman, of Philadelphia, discussed those forms of jaundice which were not due to obstruction of the ducts, and distinguished four principal groups: 1. That in which the jaundice was associated with acute infectious diseases. 2. That characterized by extensive anatomical changes in the liver. 3. Obscure infections or intoxications without marked changes in the liver. 4. A familial or hereditary type characterized by chronicity, enlargement of the spleen, and hæmolysis.

The jaundice in these four groups, as well as that experimentally produced by icterogenic poisons, such as toluylenediamine, was not hæmatogenous, but was always of hepatic origin. Reference was made to the histological changes in the liver in the jaundice in pneumonia and other infectious diseases, especially to a peculiar loosening of the cellular texture of the organ. The speaker did not share the view of William Hunter that the jaundice in toxæmias was due to a catarrhal swelling of the finest bile channels and increased viscidity of the bile, but was of the opinion that it was chiefly functional in origin and was due to changes in the pressure relations within the liver which caused a reversal of the bile flow. It was probable that exaggerated blood destruction, by furnishing the liver with a larger amount of raw material, i. e., hæmoglobin, might bring about excessive bile formation. The possibility also existed that the poisons in their passage through the liver injured the endothelial

cells of the various capillary systems of the organ, and thus facilitated the resorption of bile.

Dr. WILLIAM S. THAYER, of Baltimore, said he had been very much interested in hearing Dr. Riesman state that the jaundice of pneumonia, for instance, was hæmolytic in origin. He had been interested in seeing so many cases of pneumonia with jaundice and occurring in healthy, vigorous individuals, and this occurred especially in the early stages. The clinical evidence of the jaundice of pneumonia showed that primarily it was due to increased blood destruction during the early days of the disease. It was remarkable that so little had been said in regard to the chronic hæmolytic form. He had seen several cases during the past year. He now had under observation a young woman, about twenty years old, who had been jaundiced ever since birth, slightly at times, more so at others. She never gave any evidences of bile in her urine, although urobilin could at times be demonstrated. The stools were dark colored. She always considered herself healthy, and was only annoyed when there was an intensity of her jaundice. He hoped that more of these cases would be reported to the association.

Dr. S. J. MELTZER, of New York, referred to the "biliary pneumonias," with a prognosis always considered bad, met with years ago. Bile was an excellent solvent for the pneumococci; if there was bile in the blood, a greater solution of the pneumococci occurred, with a more grave prognosis.

Postscarlatinal Anuria for Five Days.—Dr. WILLIAM P. NORTHRUP, of New York, reported this case because it was exceedingly rare and because it had been exceptionally well observed. The patient was a boy, three and a half years old. For convenience sake Dr. Northrup divided the history into three periods. The first period consisted of twelve days, when the child suffered from scarlet fever, with severe angina, the usual eruption, etc. For three or four days following the injection of Mulford's "whole" serum he had a striking urticarial rash over the body. The second period consisted of five days, at the end of which time the boy had passed only a few drops of urine, caught in absorbent cotton, too little to be measured. He had no symptoms of uræmia and he was waterlogged. In the third period he began to pass urine first in spurts of a drachm; the following days he passed 300 c.c., 600 c.c., 1,000 c.c., 1,750 c.c., and 2,100 c.c. Now the boy was perfectly well, and showed no trace of his illness. Was this a toxic inhibition of the kidney function purely? Was there possibly such a swelling of the kidney tissue within the capsule as to inhibit its functional activity? Was this swelling in any way analogous to the urticarial swelling of the skin? Would a surgeon at the present time suggest splitting the kidney capsule? The present patient, to be sure, recovered spontaneously, but would one always wait five days in a similar case? It was a long wait.

Dr. MILTON H. FUSSELL, of Philadelphia, recalled a case of anuria which extended over a period of about four days. Some time after, the child died of general miliary tuberculosis and sections of the kidney were made with the hope that the cause of the anuria might be discovered, but absolutely nothing was found to account for it.

Dr. THAYER reported a remarkable case which he saw years ago. The child was four or five years old and for a period of at least two months was absolutely waterlogged. There was not an abnormal sign in the urine except a reduction in the quantity. He always had been at a loss to account for this condition.

Dr. FREDERICK C. SHATTUCK, of Boston, recalled a case of scarlet fever in which, during the convalescence, a tremendous polyuria occurred, the opposite to what happened in Dr. Northrup's case. There was nothing abnormal about the urine except the excessive amounts passed.

Dr. R. D. RUDOLF, of Toronto, asked Dr. Northrup if there were any symptoms of nephritis before the administration of the antitoxine.

Dr. NORTHRUP replied that there were none. Many of these cases had been reported. In some it was stated that the children were given a tub bath every day, and this offered a loophole for a mistake, even though the cases were very carefully observed.

Dr. FRANCIS P. KINNICUTT, of New York, after being informed that the urticaria was very severe, said that this as a cause of the anuria appealed to him. In angioneurotic œdema there was known to be a swelling of the mucous membrane of the stomach. Why should not this occur in the kidneys as well? Taking all in all, this suggested to him a probable cause of the anuria.

Book Notices.

[*We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.*]

Pulmonary Tuberculosis and Its Complications, with Special Reference to Diagnosis and Treatment. For General Practitioners and Students. By SHERMAN G. BONNEY, A. M., M. D., Professor of Medicine, Denver and Gross College of Medicine, Medical Department of the University of Denver, Visiting Physician to St. Luke's Hospital, etc. Second Edition, thoroughly Revised. With 243 Original Illustrations, Including 31 in Colors and 73 X Ray Photographs. Philadelphia and London: W. B. Saunders Company, 1910. Pp. 955. (Price, $7.)

The second edition of Dr. Bonney's well known book shows many changes which bring it well up to date in our knowledge of the subject. It is stated in the preface that the book was compiled with special reference to the needs of the general practitioner and student, but it is difficult to see how any one interested in the subject could fail to benefit by it unless he not only could duplicate the author's extensive experience, but had taken the trouble to broaden and clarify his views on the subject by the construction of a work of similar scope.

It is frankly written from the standpoint of the clinician, and the larger part of it is very properly devoted to the clinical aspects of the subject. The theoretical considerations, however, are reviewed in some detail, and much recent experimental evidence has been introduced. In this part of the book the author has maintained a broad, judicial attitude, recounting all sides of the various disputed questions, and the confusion which results is but a fair reflection of our present knowledge of the subject.

A concise summary of the arguments, however, is usually presented, and the author takes a definite stand when it comes to the application of the theories involved, as, for example, on the relation of human and bovine tuberculosis, when he concludes "that the practical dangers of infection from the bacillus of cattle are sufficiently real to justify no abatement of legislative, municipal, and individual measures to suppress the disease among domestic animals and afford protection to the human race." It might be suggested that the arrangement of the book is such as to make it a little difficult to find one's way about, particularly in the section devoted to theoretical considerations. It is written in discursive style, with no headings except the titles of the chapters, and, while it affords a full, connected argument, the amount of reading frequently necessary to come upon a certain point must detract from its value as a reference book.

The clinical aspect of the subject is treated with great fullness, with the result of affording a clear and reliable picture of the disease. The diagnosis of the incipient stage—a matter of such vital importance to the general practitioner—is a subject upon which experts are inclined to differ. The relative importance of the various physical signs is differently interpreted by different authorities, and the testimony of any one with Dr. Bonney's experience is well worth consideration. He places most dependence upon the occurrence of localized fine crackling râles, brought out by moderate coughing, and states that in the vast majority of cases this sign may be elicited before any changes in percussion note, breath sounds, or voice transmission. An epitome of diagnostic points would be appreciated, but perhaps the author believes that such a difficult subject as the diagnosis of tuberculous disease demands an amount of study that might be discouraged by appending anything so simple as an outline.

A mere outline of the scope of the book would fill more space than this review may occupy, but there may be mentioned important chapters on the Röntgen rays, specific diagnostic and therapeutic agents, an extensive consideration of all complications, etc. In the matter of treatment, broad sociological considerations, as well as matters pertaining directly to the individual, are studied with the thoroughness and care characteristic of the book. It is all well worth while.

Urgent Surgery. By Félix Lejars, professeur agrégé à la Faculté de médecine de Paris, chirurgien de l'Hôpital Saint-Antoine, membre de la Société de chirurgie. Translated from the Sixth French Edition by William S. Dickie, F. R. C. S., Surgeon, North Riding Infirmary, Middlesbrough, etc. With Twenty Full Page Plates and 994 Illustrations, of which 602 are Drawn by Dr. E. Daleine and A. Leuba, and 217 are from Original Photographs. Vol. I. Introductory—Head—Neck—Chest—Spine—Abdomen. New York: William Wood & Co., 1909. Pp. xiv-617. (Price, $7.)

The author does not mean by urgent surgery merely the surgery of injuries, but those clinical conditions that demand immediate surgical action. So he presents in an essentially practical manner the indications for and the technical details of the principal urgent operations of the head, the neck, the thorax, the spine, and the abdomen. He avoids theoretical discussions and descriptions of untried methods, but elucidates his text by descriptions of clinical cases. The translation is satisfactory and the volume is admirably illustrated. It will prove of interest not only to medical men whose isolation obliges them to rely on themselves, but also to surgical specialists.

Surgery. Its Principles and Practice. By Various Authors. Edited by William Williams Keen, M. D., LL. D., Emeritus Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Philadelphia, and John Chalmers Da Costa, M. D., Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Philadelphia. Volume V. With 550 Illustrations, 45 of them in Colors. Philadelphia and London: W. B. Saunders Company, 1909. Pp 1,274. (Price, $7.)

This final volume of the *System* maintains the admirable standard attained by its predecessors. The first paper, on the surgery of the vascular system, is by Dr. Rudolph Matas, who in his usual trenchant and thorough style describes the best method of pericardiotomy, of thoractomy and cardiorrhaphy, and of treating surgical conditions of the veins and arteries and hæmorrhage. There is an excellent description of endoaneurysmorrhaphy, or Matas's operation, and the entire section on aneurysm is a most important contribution.

The next chapter, on the surgery of the female genitourinary organs, includes a section by Dr. P. Brooke Bland on methods of examination and diagnosis; one by Dr. J. M. Fisher on the surgery of the vulva and vagina; and one by Dr. E. E. Montgomery on the surgery of the uterus, broad ligaments, Falloppian tubes, and ovaries.

Dr. J. H. Gibbon is the author of a concise and practical chapter on surgical technique.

The chapters on ligation of arteries in continuity and on amputations are by Dr. Warren Stone Bickham. Dr. James P. Warbasse has written the chapter on operations on bones and joints. Dr. J. B. Roberts is the author of a brief chapter on plastic surgery; Dr. William L. Estes of a chapter on the surgery of accidents; Dr. Charles H. Mayo of that on the surgery of the parathyreoid bodies; and a special chapter is devoted to the intracranial surgery of the fifth and eighth nerves. Dr. H. A. Hare is the author of the chapter on general anæsthesia and anæsthetics, the late Dr. Karl G. Lennander wrote the chapter on local anæsthesia, and his assistant, Dr. Zachrisson, completed the section on spinal anæthesia, Dr. George E. Armstrong wrote on the surgery of the infectious diseases, Dr. E. A. Cadman on the use of the x ray and radium in surgery, Mr. H. L. Carson on the legal relations of the surgeon, Dr. W. M. L. Coplin on the laboratory as an aid to surgical technique and diagnosis, and Dr. A. J. Ochsner on the surgical organization of a hospital.

Constipation and Allied Intestinal Disorders. By Arthur F. Hertz, M. A., M. D., Oxon., M. R. C. P., Assistant Physician, Physician in Charge of the Electrical Department, and Demonstrator of Morbid Anatomy at Guy's Hospital, etc. London: Henry Frowde (Oxford University Press) and Hodder & Stoughton, 1909. Pp. xiii-344. (Price, $5.)

This monograph expresses the results of three years' research on the physiology and pathology of

the movements of the alimentary canal, a preliminary account of which gained the Radcliffe prize at Oxford University. The first seven chapters of the book describe the physiology of the intestinal movements and of defæcation; by administering bismuth carbonate the x ray showed the movement of that opaque substance in the intestines and afforded the means to study the normal and abnormal movement of the intestines.

Constipation may manifest itself by insufficient frequency of defæcation or by insufficient quantity of stool, or the fæces may be abnormally hard and dry. A more scientific classification is according to the derangement of the two physiological processes that maintain the regular action of the bowel, that is, the passage of the residue of food from the stomach to the pelvic colon, and the complete evacuation of the pelvic colon at proper intervals; in the first class of constipation the passage through the intestines is delayed, while a defæcation is normal; in the second class there is no delay in the arrival of the fæces in the pelvic colon, but their final excretion is not adequately performed. There are various subdivisions of both of these classes.

The symptoms and causes of constipation are described, and the methods of prophylaxis recommended are excellent. Little that is new is mentioned under treatment, but the most advisable procedures are described. The volume is a most interesting contribution to medical literature.

Diagnostisch-therapeutisches Taschenbuch der Tuberkulose. Ein Leitfaden für den praktischen Arzt. Von Dr. D. Epstein, Kiew, Russland. Berlin und Wien: Urban & Schwarzenberg, 1910. Pp. viii-143. (Price, 5 M.)

Epstein's manual is very timely. Of textbooks on tuberculosis we have quite a number, and there is hardly a civilized language which does not supply us with one or more large volumes on the subject. But this is the first compendium we have seen which pays special attention to the practical side, and, although it is based upon German literature only, it can be highly recommended.

MEDICOLITERARY NOTES.

A Priest in Spite of Himself, by Rudyard Kipling, in the August *Delineator*, is a continuation of Brother Square Toes. In addition to the medical gentlemen in the latter story, the reader will meet other distinguished personages, including M. Talleyrand de Périgord, where the truffles come from. Gelett Burgess describes in Getting Pretty Quick the tedious and exquisitely painful process undergone by middle aged women in the removal of the epidermis to obtain a baby like skin; the article lends new meaning to the proverb *Il faut souffrir pour être belle*. Of five babies offered by the *Delineator* for adoption, Eugene and Billy Brown look as if they would make very good sons for physicians.

* * *

Dr. Ben Trovato insists that what he calls Bellona sausage was evidently predestined to form part of the army ration.

* * *

Prolonged fasting is essentially the performance of a crank, just as true temperance year in and year out is the hall mark of a normal, well balanced character. It is not necessary to point out to our readers the danger of leaving the digestive tract idle for extended periods, but they may find opportunity to warn their patients against the enthusiastic adoption of methods advocated in sensational magazine articles. Peristalsis in all probability is normally as continuous as the heart beat, but it requires the stimulation of the presence of food. If too much food is being eaten, the quantity should be diminished at each regular meal. The overworked alimentary tract will thus receive normal rest, which does not mean idleness. Nature, so far as life is concerned, is never idle.

* * *

Our old friends the diatheses seem likely to come up once more for study, owing to the attention now being given to the rheumatism-gout syndrome. We are now taught that the gouty, or the arthritics as we may call them after the French, furnish not only most of the idle and criminal, but also the geniuses and individuals of great talent. All the erratic performances of genius depend upon lithæmia, a theory which appeals to us much more strongly than the astigmatic hypothesis. The arthritics are of explosive disposition mentally, and may be known by premature canities or baldness, by sluggishness except under occasional inspiration, and by their enormous appetites. This latter symptom has not received the attention it deserves. Such patients are usually ordered to lower or diminish their diet, whereas, their assimilation being faulty, Nature very kindly directs them to eat freely in order to secure sufficient nutriment.

* * *

Diagnostic nihilism seems likely to become as popular with certain members of the profession as the therapeutic variety. We are asked to believe that there is no such condition as neurasthenia. Sufferers from this nonexistent complaint, among whom are a few physicians, will be greatly surprised at this blotting out of their symptoms. To us the theory of a nervous organization unable, like badly made or worn machinery, to furnish the expected power is logical and attractive, and we shall continue to hold to it till we are shown a demonstrable lesion somewhere. The new nihilists must get a better bomb than the negation of neurasthenia.

* * *

Shower baths to be attached to any tub are now obtainable. To get the real value of a shower, personally or for a patient, turn on the water *suddenly*, as it is the shock that differentiates it beneficially from the ordinary tub bath.

* * *

A paragraph from a medical journal is running about the country giving advice regarding the care of the feet. Washing with alcohol, painting with potassium permanganate, the use of an alum and talcum powder, and the early extirpation of corns are advised. As a matter of fact the feet require no treatment save with soap and water, if their owner can control his vanity sufficiently to allow himself to wear easy shoes. There are now numerous makes of ready made shoes so sensibly constructed

as to permit of comfortable walking the first day they are worn. Shod with such, one may bid defiance to corns, chilblains, clubbed toes, or ingrowing nails. They do not make the feet look small, but, on the other hand, they make the wearer unconscious of his feet, which comes to the same thing.

* * *

The habit of certain ornately dressed persons of parading Broadway with a toothpick emerging at an angle from a corner of the mouth has fortunately become extinct. According to Petronius, however, the young cads of Rome used silver toothpicks in the same way; they felt superior to common folk, who contented themselves with a fishbone or prepared feather. Tooth powders were well known to the Romans. Martial found a box in the boudoir of some elderly belle and wrote thereon to this effect: What have I to do with thee? Give me to some young girl; I am useless to false teeth.

* * *

There are in various parts of the country "back to nature" clubs, the members of which eat only raw foods and sleep in newly dug trenches in the earth; they go about barefoot. Possibly evolution may be hastened or guided, but it cannot be resisted. Cooking, the outcome of ages of experience, has been scientifically established as a valuable preparation and aid to digestion. Our intellectual development is as "natural" as any other phenomenon in nature; why ignore it? Wherein is dirt a superior bed covering to wool, linen or cotton? There are other good reasons for protecting the foot besides the bacillus of tetanus. Civilized man has many times the resisting power to disease of that of any savage whom these clubs wish to emulate.

NEW PUBLICATIONS.

Beddoes, Thomas Pugh.—Syphilis. Its Diagnosis, Prognosis, Prevention, and Treatment. New York: Paul B. Hoeber, 1910. Pp. viii-224. (Price, $2.)

Cotton, Frederic J.—Dislocations and Joint Fractures. With 1,201 Illustrations, 830 from Drawings by the Author. Philadelphia and London: W. B. Saunders Company, 1910. Pp. 654. (Price, $6.)

Longyear, H. W.—Nephrocoloptosis. A Description of the Nephrocolic Ligament and its Action in the Causation of Nephroptosis, with the Technic of the Operation of Nephrocolopexy, in which the Nephrocolic Ligament is Utilized to Immobilize both Kidney and Bowel. With Eighty-eight Special Illustrations and a Colored Frontispiece. St. Louis: C. V. Mosby Company, 1910. Pp. 251. (Price, $3.)

Burrage, Walter L.—Gynæcological Diagnosis. With Two Hundred and Seven Text Illustrations. New York and London: D. Appleton & Co., 1910. Pp. xvi-656.

Straub, Major Paul Frederic.—Medical Service in Campaign. A Handbook for Medical Officers in the Field. Prepared under the Direction of the Surgeon General, United States Army, and Published by Authority of the War Department. Illustrated. Philadelphia: P. Blakiston's Son & Co., 1910. Pp. vii-164.

Dock, George, and Bass, Charles C.—Hookworm Disease. Ætiology, Pathology, Diagnosis, Prognosis, Prophylaxis, and Treatment. Illustrated with Forty-nine Special Engravings and a Colored Plate St. Louis: C. V. Mosby Company, 1910. Pp. 250.

Dudley, Emilius C., and von Bachellé, C.—The Practical Medicine Series. Comprising Ten Volumes on the Year's Progress in Medicine and Surgery. Under the General Editorial Charge of Gustavus P. Head, M. D., Professor of Laryngology and Rhinology, Chicago Postgraduate Medical School, and Charles L. Mix, A. M., M. D., Professor of Physical Diagnosis in the Northwestern University Medical School. Volume IV Gynæcology. Series 1910. Chicago: The Year Book Publishers, 1910. Pp. 230. (Price, $1.25.)

Headden, William P.—The Occurrence of Arsenic in Soils, Plants, Fruits, and Animals. Denver: The Colorado Scientific Society, 1910. Pp. 345-360.

Transactions of the American Ophthalmological Society. Forty-sixth Annual Meeting, held in Washington, D. C., 1910. Volume XII, Part II. Philadelphia: American Ophthalmological Society, 1910. Pp. 339 to 678.

Transactions of the International Medical Association of Mexico. Fifth Annual Session, held at Aguascalientes, Agts., January 25, 26, and 27, 1910. Monterey: American Printing Company, 1910. Pp. 108.

Annual Announcement and Catalogue of the Baltimore Medical College. Session 1910-1911. Pp.40.

The Scranton, Pa., Society for the Prevention and Cure of Consumption. Seventh Annual Report, for the Year Ending December 30, 1909. Pp. 16.

Miscellany.

Notes of a Recruiting Officer in Egypt.—Hughes remarks that according to the Recruiting Law of 1902 every Ottoman subject resident in Egypt between the ages of nineteen and twenty-seven years is liable for military service. There are many causes for exemption from this service which need not be detailed here excepting that the payment of £20 frees the payer from all liability. Consequently the conscripts are almost entirely drawn from the poorer classes. Conscripts are balloted at nineteen years and called to the army when twenty-one years of age. Between 2,500 and 3,000 men are required annually for the army, but as the standard of fitness is a fairly high one large numbers of men have to be called up and examined. The recruits have to be at least five feet six and a half inches in height, well developed, and sound in sight, heart, etc. The men called for the service pass through the hands of two English army medical officers (of whom Hughes is one), who pick out the men who are up to the required standard. These officers move from one district to another, dividing the country between them, and seeing from 300 to 400 men in a day. The men are called up in turn and are first measured for height. If a man is under height he is pronounced at once unfit and not further examined. Those who reach the necessary height have also their chests measured and go through a rapid examination. The eyes are examined by oblique illumination for opacities and nebulæ of the cornea, the lids are everted; the ears, the head, the teeth, and the movement of the various joints are tested, and the heart is auscultated. The examination is necessarily little more than a rapid survey of each man, but with experience it becomes fairly reliable. The recruits, it may be said, are again examined by another English army medical officer in Cairo before final enlistment. The percentage of men found "fit" for the army is about fourteen. Conscription being still most unpopular in Egypt, intentional blinding is occasionally met with. The means employed are either the placing of a hot needle on the cornea, producing a dense white leucoma or a puncture often involving the lens; or by the introduction of lime or an irritant vegetable juice in the eyes.—*Lancet*, July 16, 1910.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of and deaths from cholera, smallpox, yellow fever, and plague have been reported to the surgeon general of the United States Public Health and Marine Hospital Service for the week ending August 5, 1910:

Place.	Date.	Cases.	Deaths.
Cholera—Foreign.			
India—Calcutta	June 5-11		31
India—Madras	June 18-24		1
Java—Batavia	June 5-18	40	31
Java—Samarang	June 18		
Russia—Baku, government	June 19-25	7	5
Russia—Don, territory	June 19-25	461	166
Russia—Kharkov, government	June 19-25	84	45
Russia—Kherson, government	June 19-25	207	80
	June 25-July 1	19	8
Russia—Kief, government	June 19-25	143	59
Russia—Kuban, government	June 19-25	471	245
Russia—Minsk, government	June 19-25	49	13
Russia—Novorossysk	June 19-25	3	2
Russia—Poltava, government	June 19-25	147	66
Russia—Rostov-on-the-Don	June 19-25	1,110	350
Russia—St. Petersburg	June 19-25	4	2
Russia—Samara, government	June 19-25	2	2
Russia—Saratov, government	June 19-25	1	
Russia—Sebastopol	June 19-25	5	1
Russia—Simbirsk, government	June 19-25	1	
Russia—Tambov, government	June 19-25	5	3
Russia—Taurida, government	June 19-25	32	24
Russia—Terek, territory	June 19-25	6	2
Russia—Theodosia	June 19-25		
Russia—Tiflis	June 19-25	2	
Russia—Tschernigov, government	June 19-25	120	39
Russia—Vitebsk, government	June 19-25	3	
Russia—Voronesch, government	June 19-25	17	8
Russia—Yekaterinislav, government	June 19-25	665	303
Straits Settlements—Singapore	June 5-11	7	7
Yellow Fever—Foreign.			
Brazil—Bahia	Apr. 30-June 3	2	2
Brazil—Manaos	June 26-July 2	2	2
Brazil—Para	July 3-9	5	3
Plague—Foreign.			
Brazil—Bahia	Apr. 30-June 3	3	3
Chile—Iquique	June 4-12	12	4
Chile—Taltal	Apr. 1-27	a12	
China—Hongkong	June 12-18	2	2
India—Bombay	June 22-28		44
India—Calcutta	June 5-11		27
India—Kurrachee	July 19-25	17	17
Japan—Formosa	June 5-18	6	5
Peru—Arequipa, Department	Mar. 1-31	18	9
Peru—Mollendo	May 28-June 10	1	1
Peru—Callao	Mar. 1-31	2	
Peru—Lambayeque	Mar. 1-31	25	10
Peru—Libertad	Mar. 1-31	32	20
Peru—Lima	Mar. 1-31	15	9
Peru—Piura	Mar. 1-31	6	3
Smallpox—United States.			
Alabama—Burmingham	July 17-23	2	
District of Columbia	July 17-23	1	
Florida—Hillsboro County	July 17-23	1	
Florida—Liberty County	July 17-23	14	
Louisiana—New Orleans	July 17-23	5	
Nebraska—Lincoln	June 1-30	7	
Tennessee—Shelby County	May 1-June 30	39	
Utah—Davis County	June 1-30	17	
Utah—Juab County	June 1-30	2	
Utah—Salt Lake County	June 1-30	7	1
Utah—Utah County	June 1-30	1	
Smallpox—Foreign.			
Abyssinia—Adis Ababa	June 5-28		
Argentina—Buenos Aires	Apr. 1-30		83
Austria—Galicia	July 3-9	1	
Brazil—Bahia	Apr. 30-June 10	141	110
Brazil—Para	July 3-9	2	1
Brazil—Santos	May 30-June 5		1
Canada—Pictou	July 17-23	2	
Canada—Vancouver	May 1-31	2	
Chile—Valparaiso	May 19	4	
China—Chefoo	July 2	1	
Egypt—Cairo	June 18-24	1	
France—Paris	June 20-26	2	
Germany—general	June 3-9	1	
India—Bombay	June 22-28		4
India—Kurrachee	June 19-25	2	
India—Madras	June 18-24		2
Italy—general	July 4-10	1	
Italy—Naples	July 4-10	5	1
Malta	June 26-July 2	1	
Mexico—Aguascalientes	July 12-16		3
Mexico—Mexico	June 12-18		1
Portugal—Lisbon	July 3-9	30	
Russia—Moscow	June 19-25	25	3
Russia—Odessa	June 25-July 1		2
Russia—Riga	June 26-July 2	50	
Spain—Barcelona	July 5-11		1
Spain—Valencia	July 3-9	1	
Spain—Vigo	July 3-9		1
Straits Settlements—Singapore	June 5-11	9	3
Switzerland—Zurich, Canton	July 3-9	4	

Public Health and Marine Hospital Service:

Official list of changes in the stations and duties of commissioned and other officers of the United States Public Health and Marine Hospital Service for the seven days ending August 3, 1910:

BANKS, C. E., Surgeon. Granted seven days' leave of absence from August 1, 1910.

BIERMAN, C. H., Pharmacist. Granted fourteen days' leave of absence from July 26, 1910; leave of absence for ten days en route to station, amended to read nine days en route to station.

BLANCHARD, J. F., Acting Assistant Surgeon. Granted three days' leave of absence from July 11, 1910.

CANNON, CLAUDE C., Pharmacist. Directed to proceed to Vineyard Haven, Mass., and report to the medical officer in command for duty and assignment to quarters.

CLEAVES, F. H., Acting Assistant Surgeon. Granted three days' leave of absence from July 28, 1910, under paragraph 210, Service Regulations.

DELO, J. M., Acting Assistant Surgeon. Granted seven days' leave of absence from July 16, 1910, under paragraph 210, Service Regulations; granted seven days' leave of absence from July 24, 1910.

DRAPER, WARREN F., Assistant Surgeon. Directed to proceed to Angel Island, Cal., and report to the medical officer in command for duty and assignment to quarters.

FOX, CARROLL, Passed Assistant Surgeon (on leave). Directed to report at the Bureau upon special temporary duty.

FROST, W. H., Passed Assistant Surgeon. Directed to proceed to Des Moines, Iowa, upon special temporary duty.

GILLESPIE, JULIAN M., Assistant Surgeon. Directed to proceed to Honolulu, Hawaii, and report to the Chief Quarantine Officer for duty; in addition to present duties, directed to report to the commanding officer of the revenue cutter *Thetis* from time to time for temporary duty.

HAMILTON, H. J., Acting Assistant Surgeon. Leave of absence for four days from July 19, 1910, amended to read four days from July 26, 1910.

HARKIN, F. McD., Acting Assistant Surgeon. Granted fourteen days' leave of absence from August 1, 1910.

KEARNY, RICHARD, Assistant Surgeon. Directed to proceed to San Francisco, Cal., and report to the medical officer in command for duty and assignment to quarters; directed to report to the medical officer in command at Chicago, Ill., for temporary duty en route to station.

KORN, W. A., Passed Assistant Surgeon. Directed to proceed to Point Pleasant, N. J., for the purpose of making examination of keepers and surfmen of the Life Saving Service.

MACDOWELL, W. F., Pharmacist. Granted twenty-eight days' leave of absence from August 10, 1910.

MAGUIRE, E. S., Pharmacist. Granted thirty days' leave of absence from August 6, 1910.

MULLAN, E. H., Passed Assistant Surgeon. Granted two days' leave of absence from July 30, 1910, under paragraph 191, Service Regulations.

ONUF, B., Acting Assistant Surgeon. Granted seven days' leave of absence from July 22, 1910, under paragraph 210, Service Regulations.

PREBLE, PAUL, Assistant Surgeon. Granted one month's leave of absence from August 8, 1910.

RYDER, L. W., Pharmacist. Granted one day's leave of absence, July 25, 1910, under paragraph 210, Service Regulations.

SCOTT, J. F., Acting Assistant Surgeon. Granted twenty-four days' leave of absence from June 3, 1910.

SPRATT, R. D., Passed Assistant Surgeon. Granted five days' leave of absence from July 23, 1910, on account of sickness.

STEVENSON, J. W., Acting Assistant Surgeon. Granted thirty days' leave of absence from August 3, 1910.

STIER, C., Pharmacist. Granted one day's leave of absence July 8, 1910, under paragraph 210, Service Regulations.

STILES, CHARLES WARDELL, Professor. Detailed to represent the Service at the meeting of the International Zoological Congress at Gratz, Austria, August 15 to 20, 1910.

Sweet, Ernest A., Passed Assistant Surgeon. Granted four days' leave of absence from July 21, 1910, under paragraph 191, Service Regulations.

Wertenbaker, W. P., Surgeon. Directed to proceed to Richmond, Va., on special temporary duty.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army, for the week ending August 6, 1910:

Banister, William B., Lieutenant Colonel, Medical Corps. Detailed for duty at the Camp of Instruction, Manœuvre Reservation, Sparta, Wisconsin.

Barney, Charles N., Major, Medical Corps. Granted thirty days' leave of absence, about September 1, 1910.

Brown, Wilmont E., First Lieutenant, Medical Reserve Corps. Sick leave of absence further extended three months.

Burkett, John A., Lieutenant, Medical Corps. Left Fort Riley, Kansas, with the 6th Field Artillery on practice march.

Clark, John A., Captain, Medical Corps. Leave of absence granted in S. O. No. 143, June 20, 1910, War Department, extended fifteen days.

Clayton, George R., First Lieutenant, Medical Reserve Corps. Reports at Camp Bruce E. McCoy, Manœuvre Reservation, Sparta, Wisconsin.

Clayton, Jere B., Major, Medical Corps. Will proceed from Vancouver Barracks, Wash., to Camp of Instruction, American Lake, Wash., for duty.

Cole, Blase, First Lieutenant, Medical Reserve Corps. Ordered to proceed from Fort Crook, Neb., to Fort Mackenzie, Wyo., for temporary duty.

Davis, William T., Captain, Medical Corps. In addition to present duties will report in person to Colonel Louis A. La Garde, Medical Corps, president of the faculty, Army Medical School, Washington, D. C., for duty as assistant instructor in ophthalmology and optometry at that school.

Ebert, Rudolph G., Lieutenant Colonel, Medical Corps. Left headquarters, Department of Columbia, Vancouver Barracks, for duty at Camp of Instruction, American Lake, Washington.

Fox, James S., Lieutenant, Medical Corps. Reported for duty at Camp Leon Springs, Texas.

Griswold, W. Church, First Lieutenant, Medical Reserve Corps. Relieved from duty at Fort Oglethorpe, Ga., and ordered to Philippine Islands, for duty on transport sailing from San Francisco, Cal., about November 5, 1910.

Haverkampf, C. W., Lieutenant, Medical Corps. Reported at Camp Bruce E. McCoy, Manœuvre Reservation, Sparta, Wis.

Morse, Charles F., Captain, Medical Corps. Relieved from duty at Schofield Barracks, H. T., and will proceed to San Francisco, Cal., and upon arrival report by telegraph to the Adjutant General of the Army for further orders.

Mount, James R., Lieutenant, Medical Corps. Reported for duty at Camp Emory Upton, Sparta, Wis.

Murray, Alexander, Captain, Medical Corps. Upon arrival at Seattle, Wash., in compliance with orders heretofore issued, will proceed to Fort Casey, Wash.

Reynolds, F. P., Major, Medical Corps. Granted one day's leave of absence.

Roberts, William M., Major, Medical Corps. Left Camp of Instruction, Gettysburg, Pa., en route to Saratoga, N. Y., and Pimlico, Md., on detached duty.

Schreiner, E. R., Major, Medical Corps. Left Fort Walla Walla, Wash., for duty at Camp of Instruction, American Lake, Washington.

Shephard, John L., Captain, Medical Corps. Leave of absence extended fifteen days.

Smith, Herbert M., Captain, Medical Corps. Relieved from duty at Fort Casey, Wash., and will proceed to Philadelphia, Pa., for duty as attending surgeon in that city.

Talbott, E. M., Captain, Medical Corps. Reported at Camp Bruce E. McCoy, Manœuvre Reservation, Sparta, Wis.

Truby, Willard F., Major, Medical Corps. Left Fort Worden, Wash., en route for Camp of Instruction, American Lake, Washington.

Van Poole, G. McD., Major, Medical Corps. Reported for duty at Camp Emory Upton, Sparta, Wis.

Wickline, William A., Captain, Medical Corps. In addition to duties with Company C, Hospital Corps, will report in person not later than October 1, 1910, to Colonel Louis La Garde, president of the faculty, Army Medical School, Washington, D. C., for duty as instructor in Hospital Corps and first aid, at that school, relieving Major Charles R. Reynolds, Medical Corps.

Williams, Harry B., Medical Reserve Corps. Granted fifteen days' leave of absence about September 15, 1910.

Winter, Francis A., Major, Medical Corps. Ordered to proceed to New York city, for consultation with the medical supply officer in that city, with reference to the purchase of medical supplies, etc.

Yemans, Herbert W., First Lieutenant, Medical Reserve Corps. Ordered to repair to Washington, D. C., at the proper time and report in person on August 21, 1910, to the Chief of Staff, for temporary duty.

Births, Marriages, and Deaths.

Born.

Love.—In Washington, D. C., on Friday, July 22d, to Captain Albert G. Love, Medical Corps, United States Army, and Mrs. Love, a daughter.

Married.

Wadsworth—Diel.—In Syracuse, N. Y., on Friday, August 5th, Dr. William Scott Wadsworth and Miss Frances Elizabeth Diel.

Wood—Gault.—In Canon City, Colorado, on Monday, July 25th, Mr. Joel L. Wood, of Victor, Colorado, and Dr. Mina B. Gault, of Spokane, Washington.

Died.

Burke.—In Clifton Springs, New York, on Monday, August 1st, Dr. John J. A. Burke, of Rochester, aged sixty years.

Cartwright.—In Roxbury, New York, on Sunday, July 31st, Dr. Silas S. Cartwright, aged seventy-six years.

Chisholm.—In Detroit, Michigan, on Friday, July 29th, Dr. George W. Chisholm, of Pontiac.

Cornish.—In Carver, Massachusetts, on Sunday, July 24th, Dr. Ellis Holmes Cornish.

Emrick.—In Carlisle, Pennsylvania, on Tuesday, July 26th, Dr. Benjamin F. Emrick, aged fifty-one years.

Gregory.—In Columbia, Louisiana, on Tuesday, July 26th, Dr. L. W. Gregory, aged seventy years.

Jennings.—In Charlottesville, Virginia, on Tuesday, August 2d, Dr. George B. Jennings, aged seventy-two years.

Jewett.—In Brooklyn, on Friday, August 5th, Dr. Charles Jewett, aged seventy years.

Kidder.—In Affton, St. Louis County, Missouri, on Wednesday, July 27th, Dr. Frederick Kidder, aged sixty-six years.

Menestrina.—In St. Louis, Missouri, on Thursday, July 28th, Dr. Jules F. Menestrina, aged forty-three years.

Moore.—In Wheeling, West Virginia, on Thursday, July 28th, Dr. C. H. Moore, aged sixty-seven years.

Page.—In Keswick, Virginia, on Friday, July 29th, Dr. Mann Page, aged forty years.

Parker.—In Three Mile Bay, New York, on Thursday, July 28th, Dr. Charles S. Parker, aged eighty-nine years.

Perry.—In Exeter, New Hampshire, on Thursday, August 4th, Dr. William G. Perry, aged eighty-seven years.

Porter.—In Dayton, Ohio, on Tuesday, July 26th, Dr. Leander S. Porter, aged eighty-one years.

Reilly.—In Far Rockaway, New York, on Wednesday, July 27th, Dr. John Wilkes Reilly.

Shimmel.—In Elgin, Illnois, on Saturday, July 30th, Dr. Albert E. Shimmel, aged fifty-four years.

Shumard.—In Venice, Ohio, on Tuesday, August 2d, Dr. G. E. Shumard, aged forty-eight years.

Strong.—In Detroit, Michigan, on Monday, August 1st, Dr. Charles R. Strong.

Stuart.—In Pittsburgh, Pennsylvania, on Monday, August 1st, Dr. George Murray Stuart, aged twenty-seven years.

Webster.—In Liberty, New York, on Saturday, July 23d, Dr. William S. Webster, aged seevnty-seven years.

Williams.—In Citronelle, Alabama, on Saturday, July 30th, Dr. Joseph F. Williams.

Woods.—In Philadelphia, on Thursday, July 28th, Dr. David Flavel Woods, aged seventy-three years.

New York Medical Journal

INCORPORATING THE

Philadelphia Medical Journal and The Medical News

A Weekly Review of Medicine, Established 1843.

VOL. XCII, No. 8. NEW YORK, AUGUST 20, 1910. WHOLE No. 1655.

Original Communications.

LESSONS FOR THE ATHLETE IN THE JEFFRIES-JOHNSON BATTLE.

BY G. FRANK LYDSTON, M. D.,
Chicago,
Professor of Genitourinary Surgery and Syphilology, Medical Department, State University of Illinois.

That few professional athletes who have led lives of idleness and self indulgence for some years can ever "come back," as the vernacular has it, has once more been demonstrated by the downfall of a popular idol. Jeffries, the mighty Jeffries, has fallen from his high estate. That dissipation is a serious barrier to the "coming back" of the athlete has never been disputed. The limitations of age also have quite generally been recognized in connection with athletics. But, despite these truisms, the public has not yet learned even common sense in matters pertaining to contests of skill and strength, being guided over and over again by mere sentiment.

The fate of the redoubtable John L. Sullivan at the hands of the younger and more agile Corbett should have taught wisdom to both prize ring gladiators and the public, but the lesson evidently was wasted. Mr. Jeffries in his fight with Johnson did yeoman service in proving that history repeats itself in the prize ring as elsewhere. Sullivan came to the fore through a series of victories over men who either were inferior or had "gone back." He took his pitcher to the well once too often and went the way of the other "has beens" whom he himself had consigned to the dead lumber room of pugilism. Corbett evidently was not susceptible to the suggestion of an inevitable "knock out" within four rounds which had won for Sullivan so many battles.

Sullivan was supposed to have overcome the effects of any dissipation in which he might have indulged, and his years were ignored—he was still invincible in the minds of the public. The press teemed with accounts of his superb condition during his training. He could "skip the rope 1,500 times without stopping," could do splendid road work, and was alleged to have all his old time cleverness and speed. One point, however, was overlooked: Advancing age, the wear and tear of numerous periods of training, the unavoidable strain of many battles, and various indulgences and indiscretions which usually undermine the nervous and circulatory mechanisms might have lessened his power of resistance to and recuperation from bodily injuries. Corbett's blows to the solar plexus and the strain and excitement of the battle were altogether different from rope skipping, training bouts, and road work, as the hitherto unconquerable John L. found to his cost during the combat.

Jeffries's history was that of Sullivan over again. Possibly the promoters really were wiser than they now seem. Rumor has it that they knew at the outset the hopelessness of the attempt to bring Jeffries back to his old time form, but were after the money and willing to sacrifice the once great pugilist to financial interests. Possibly the governor of California was shrewder than he has been given credit for being. To have permitted a white Californian to be whipped in San Francisco by a negro would have meant the governor's political death—which bears, not on the scientific side of athletics, but upon the question of the frequent crookedness of professional contests primarily designed to get the money of a credulous public.

Whatever the merits of the rumors of crookedness in the latest pugilistic event may be, this much is certain, viz., that idleness, infractions of the laws of health, and the strain of training demanded and received their full and legitimate toll at the recent fight in Reno.

"Youth will be served," and, while thirty-five is young enough for successful effort in most fields of human endeavor, the athlete of that age is already old. There have been, it is true, exceptions to the rule, Fitzsimmons being a notable example. Fitzsimmons, in his prime, however, was little less than a freak of nature—a biological sport. In all my experience with athletics and athletes—covering a period so long that I would rather not reduce it to figures—I have never met with a physique so remarkable as that of Fitzsimmons. He never was a Sandow or, in any sense, a phenomenon so far as bulk of muscle and mere brute strength were concerned, but he probably had more, better quality, and better disciplined muscle where he most needed it in his somewhat strenuous specialty than any pugilist who ever entered the ring. Above all, he led a very regular life and conserved his physical capital. His achievements and the age at which he accomplished some of them are no more to be taken as a criterion of average athletic capacity than the achievements of the genius are to be accepted as the standard of human brain capacity.

My late friend, Edward Hanlon, king of the single sculls, once said to me: "Doctor, the professional athlete finally lowers his colors, not because athletes are continually growing better, but because all athletes go back sooner or later. Age tells." Mr. Hanlon's statement should be accepted as a truism. We do not breed men for athletics and cannot expect a

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strain of blood which will develop better and better athletes. Improved methods, larger financial rewards, and greater popularity of certain forms of athletics tend to elevate both standards and records, but the average capacity for athletics remains practically the same. The athlete comes to the fore, lays the best there is in him before the shrine, and holds his laurels until he starts on the toboggan slide for the land of "gone back." His triumphant successor travels the same road. There are record breakers, it is true, but they are few in number and do not disprove what I have said. Records, like rewards, stimulate athletic endeavor, but apparently do not improve the average intrinsic capacity of athletes.

It was poetic justice that Jeffries, who had never before met in the ring a man who could fairly be classed as a match for him, should travel the same road as had the men whom he himself had helped down the slide. Every "top notcher" whom he ever had whipped was well on his way to the dead lumber room of pugilism before Jeffries finished the work which Nature or self maltreatment of his once splendid physique, or both, had begun. In the same way another popular idol was smashed at Reno by a younger, stronger man and the public was compelled to learn its lesson over again.

The athlete who does not get the best out of himself before the age of thirty is exceptional. "There are only just so many battles in a man," aptly remarked a certain pugilist who chanced to be a patient of mine. This experienced critic might have added: "There are only just so many sessions of training in a man."

The work of training is very strenuous. It should draw the best out of a man. He shows the best results who has the most reserve physical force on which to draw. Training goes hard with the man who has no reserve of energy in his physiological bank. He may have stamina enough to put himself in excellent muscular condition, yet have no reserve left for emergencies on the eventful day of trial. In the midst of the battle he finds himself a physical bankrupt. Jeffries was whipped by his training before he ever faced Johnson, as was plain to him who could read between the lines.

Laying aside the vociferous claims of Corbett, et al., that Jeffries had "come back,"—and like the stage queen in Hamlet, these good partisans did protest too much—the Jeffries "grouch" was proof enough of his precarious physical condition. And this is not a case of "hind sight" either. It so happens that before the fight I predicted to a group of physicians precisely what subsequently happened at Reno. I laid particular stress upon Jeffries's irritability, which to me was proof positive that his nervous system was not standing the grueling work of training. Give me every time the athlete who smiles. A perfectly healthy man is good natured. Who should be better natured than a well conditioned athlete? Jeffries's already depleted nerve force had been exhausted by his training when he entered the ring at Reno. He was a nervous bankrupt with nothing left for emergencies—and there were certainly some to be met on July 4th. Small wonder that he made such a poor showing.

One of the advantages of youth in athletics is its power of recuperation. A severe blow stings, but unless a vital point is reached the young athlete in condition speedily reacts. Not so the man of riper years. The effect of the blows is cumulative. He receives another blow before the effect of the first has passed off. The shock, circulatory depression, and consequent loss of energy compound quickly under successive blows. With the loss of energy comes a gradually increasing lack of confidence. The fighter loses heart, and this is the beginning of the end. It is now "up to" the other man. Corbett's left punches to Sullivan's solar plexus and Johnson's relatively light blows in the early rounds of his battle with Jeffries will serve to point the moral and adorn the tale. Add to age limitations bad habits in the intervals between battles and the strain of training, and one may well marvel that the "has been" does not sooner succumb before the blows of a younger and better conditioned adversary.

Apropos of the particular case of Jeffries, it is worthy of remark that big men, who especially tend to put on flesh, are much harder to condition than are smaller, more wiry men. A good big man is exceptional, one who will stay good for a prolonged period is more so, while one who can come back into form after years of inaction and bad habits is indeed a rare bird. The records and regulations of insurance companies, which are coldly unsentimental, tell an interesting story as to the big man as a risk.

The large amount of fat which Jeffries was compelled to remove in his training—which, by the way, was much greater at the time the fight was arranged than the public suspected—demanded a fearful effort, an effort which a perfectly sound heart could ill endure. That Jeffries's heart, and, for that matter, all of his vital organs were not the worse for his previous training, his various battles, and the life he had led since leaving the ring, could not reasonably have been asserted, no matter how sound his various organs might have seemed to be on physical examination. External, and to a certain extent internal, fat may be trained off, but a heart muscle once deteriorated cannot be restored. In order to "come back" the "has been" must bring his heart with him. This Jeffries could not do, and if, as some assert, he showed a "yellow streak" in the ring, certain yellow streaks in his heart muscle which only the microscope would show might explain it. Gameness and heart weakness are not often associated in purely physical efforts. That Jeffries is at bottom a coward, as has been asserted, I do not believe. No physical coward could ever have faced such punishment as he received at the hands of Sharkey and Fitzsimmons.

Then there are the stomach, the liver, and especially the kidneys to be considered. The strain on these organs during a course of training following an interval of dissipation and abuse of various physiological functions is something to be seriously considered. Digestion, assimulation, tissue chemistry, and elimination must all be normal, else the athlete is in a bad way. If he has to fight poisons from within in addition to his training work and the blows of an opponent which come later, he is caught between two fires.

It is many years since I took an active interest in athletics and it is quite possible that I may be

"crotchety" and old fashioned and without authority on matters of physical training, but I am going to venture a word or two just the same: The boxer is an athletic specialist and should "stick to his last." His first duty is to acquire symmetrical physical development—to put every muscle of his body in the best possible condition and to bring it under his brain control. His muscle fibre should be subject at all times to his brain cell—i. e., to his will. Having accomplished this he is ready for training for contests. In his training let him stick to his fighting; let him fight, fight, fight until it is time to rest up before the battle. Most of the training methods in vogue among pugilists are time and energy wasted, and the fighter has little of either to spare. He should train his brain, his eye, his muscles, and his endurance chiefly by the sort of action involved in the forthcoming battle. Conditioned in this way, a little fat more or less is not a serious matter.

The Japanese wrestler to the manner born is usually a very large man—I am not referring to the practitioners of jiu jitsu, but to the type of wrestler with whom wrestling is a profession coming down from father to son. He is generally overfat, and training off is not a part of his system of preparation for a bout, yet his endurance and wind are unsurpassed.

As I write I recall the wrestling match which I saw in Madison Square Garden, New York, many years ago, between Clarence Whistler and Edwin Bibby. A more strangely assorted pair would be hard to find. Whistler, a six foot specimen of perfect athletic manhood, overtopped Bibby by a head. Bibby was obviously fat, rolypoly, and with a distinct overplus of abdomen. Not a muscle showed on him. He apparently was the farthest possible remove from the conditioned athlete. For four and a half hours Whistler and Bibby wrestled without either securing a fall, and the match was decided a draw. Yet it appeared as though Bibby had no chance whatever with the superb giant to whom he was opposed. Whistler afterward told me that he himself at first took Bibby as somewhat of a joke. "But," he said, "that fat little joke taught me in that match more wrestling than I ever knew in all my life."

There is food for reflection in the foregoing for future aspirants for the championship title. If Johnson does not go the pace that kills for the next year or two, I fear that a match between the negro and any one of those who have been so far mentioned as likely championship timber would merely blast another "white man's hope."

Just a word in closing on a lesson for science to be drawn from the exploits of the black race in the prize ring: It will be remembered that there was quite a general discussion of the prospect of the negro, Johnson, showing a racially characteristic yellow streak in the ring. This is another illustration of the stupidity and unfairness of the public, which was willing to wipe out the color line—if Jeffries won. Jeffries himself wiped it out the day he signed for the fight. Here is the evidence which the stupid public would not weigh and which is further proof that the public will not learn from observation and experience things which are obvious. George Dixon, the greatest little fighter that ever lived, was a negro. Joe Walcott and Joe Gans, greatest in their class, are negroes.[1] Peter Jackson, who would have been champion heavyweight if Sullivan had consented to fight him, was a negro. And finally comes Jack Johnson, with the world's championship in his pocket.

And now for the point of general scientific interest: A little over forty years ago the negro's chance began to dawn in America. Back of him stood a race of West Coast African cannibals. He was indolent and especially averse to physical effort. Mentally and physically, he moved along the lines of least resistance. He had little or no ambition and less physical stamina. It certainly is extraordinary that a negro should now reign supreme in pugilism—the white man's own particular game—a game that nowadays requires more intelligence than is usually admitted. Evolution has here worked pretty rapidly—and, I fear, disastrously, for the race problem is likely to be made even more complicated by Johnson's victory. The average negro's head was not built to withstand sudden inflation.

I have repeatedly stated in my various writings on athletics my opposition to professional athletics of all kinds. Athletics for health and symmetrical development should be the ideal. Athletics for records are well enough, provided there is no overstrain or imperfect preparation for events. Amateur athletics, especially boxing, fencing, and wrestling, should be encouraged, but it will be a gladsome day when professional contests shall be no more. And I am not prejudiced against such contests because I deem them necessarily either brutal or brutalizing, but because of their sordidness, frequent dishonesty, and, above all, their absurdity when considered in the light of the proper ends of athletics, health, symmetrical physical development, endurance, and self control. Amateur boxing, fencing, and wrestling can be made stepping stones to health, manliness, alertness, and self reliance. Such sports are excellent training alike for mind and body. Professional contests should be discouraged, especially by the physician. They are not often morally, socially, or, in the long run, even physically elevating. The truth of this statement is demonstrated by the careers of nearly all professional athletes and more particularly by those of pugilists.

815 Reliance Building.

ATONY OF THE STOMACH.

By J. W. Weinstein, M. D.,
New York.

Synonyms: Myasthenia gastrica; motor insufficiency, first degree.

A condition characterized by impairment of the motor powers of the stomach. The functions of the stomach are threefold: 1. To act as a temporary storehouse for the food. 2. To digest the food. The food stuffs, as such, cannot be absorbed and assimilated by the system. They must be split up into simpler compounds that are dialyzable, i. e., that can go through animal membranes in order to

[1] Since this was written Gans died of tuberculosis. His death is quite generally ascribed to the debilitating effects of his various attempts to reduce his weight while fighting men lighter than himself.

be absorbed by the blood. The stomach by means of the chemical materials at its disposal, the enzymes—pepsin and rennin—and the hydrochloric acid, starts the process of breaking up the complex molecule of the protein food into simpler ones; the saliva in the mean time acting on the carbohydrates. But the digestion of the stomach is only a preparatory stage to that of the intestines, where most of the work of reducing the food to the simplest cleavage products is being done, and this gives the, 3, function of the stomach, namely, to propel the food onward into the duodenum, as soon as the work of the stomach is completed. Atony of the stomach is a pathological affection, whereby the most important function of the stomach, its motility, is impaired. The food is retained in the stomach longer than it ought to be.

How is the motility of the stomach best determined? Unfortunately there is a large number of tests for this purpose. There is hardly a gastrologist of note, that has not added his name to some method for testing the motor powers of the stomach. It is this multiplicity and diversity of methods that has served to puzzle the minds of those who could not delve into all the mysteries of gastrology, and the true meaning of motor insufficiency became obscured. The simplest, best, and the one exclusively used test by the writer, is a slight modification of the method originally introduced by von Leube (1): I tell the patient to have a regular dinner, such as meat, soup, bread, some potatoes, tea or coffee prepared any way he likes best, and see me seven hours afterward without ingesting any food or drink during that time. I wash out the stomach about seven hours after partaking the meal. If food is present the motor powers are impaired. If there is no food motility is normal. This is the cornerstone upon which this article is built. A stomach with a normal motility must dispose of a regular dinner in seven hours. This rule is universal and admits of no exceptions. The writer makes this statement without reserve after having tested it on at least two thousand patients both in private and hospital practice. The original Leube test consisted of: A plate of soup, a beefsteak, a roll, and a glass of water. Of course, any man can devise any kind of a meal to suit his own taste and fancy and use it, as a test for the motility of the stomach with a fair degree of accuracy. There is one cardinal rule to be guided by. You take any kind of a meal and give it to a few normal individuals. By washing out the stomach a couple of hours later it is determined, how long it takes for that stomach to dispose of that meal. This is next used as a standard. If we find it in some patient to stay in the stomach a longer time, that is a case of motor insufficiency or impaired motility of the stomach. Both for completeness sake and also in order to impress more the rationale of the methods for determining the motility of the stomach, it will not be amiss here to mention a few other tests.

Ewald and Siever's test (2). The patient takes a wafer containing a gramme of salol. Salol is not affected by acid media; and it, therefore, is not affected by the stomach. When it reaches the intestine the salol is decomposed into phenol and salicylic acid. The salicylic acid is excreted in the urine as salicyluric acid. This can be easily detected by adding ferric chloride solution to the urine, when the urine turns to a violet color. In normal cases the reaction appears in from forty to sixty minutes.

Klemperer's oil method (3). One hundred grammes of oil are introduced through a stomach tube. Oil is not absorbed by the stomach. The oil is withdrawn from the stomach two hours later. Normally from seventy to eighty grammes of oil escape into the intestine in that length of time. When motor function is impaired a smaller quantity escapes into the intestine.

Einhorn (4) advocates as the best and easiest method, to give a substantial supper at night and wash the stomach in the morning before breakfast, when if food is present it means motor insufficiency. This method is used by a large number of practitioners. It is erroneous on the face of it. For this method implies a recess of from fourteen to fifteen hours and by it only very marked cases of stasis of food will be detected such as pyloric obstruction and very marked atony. The large majority of atonies that are met with in practice, those that are called by Riegel and Boas atonies of first degree, will not be detected by it. Dr. Einhorn is to be given credit, however, that under the heading of atony of the stomach (5) he reveals the true nature of the disease by stating that after a Leube test dinner an atonic stomach shows the presence of food after seven hours, while in the morning after a supper the night previous it is found empty.

Another test that is greatly in vogue, and that I specially introduce in order to caution against its use, is the administration of raisins or figs. Its advantage is supposed to reside within the fact that the seeds are easily detected in the stomach washings. Its disadvantage is in the other extreme that by its use too many motor insufficiencies will be found. It is easy to understand that the seeds are very apt to find a hiding place within the folds of the stomach and they are therefore likely to stay a longer time in the stomach than other foodstuffs, and thus become a serious source of error in diagnosis. The great drawback about all these fad and fancy meals is that they are not applicable to all stomachs. Some stomachs would not stand for oil, raisins, or rice, and, therefore, the digestion in such stomachs will necessarily be delayed, while a regular dinner as advocated by the writer, is relished by every one without exception. If I were to examine a vegetarian for the motor powers of his stomach, I would use a meal such as he is used to eat, and not a meat meal.

It was emphasized within this paper, that a stomach with a normal motility, must empty itself of a regular dinner in seven hours. A pertinent question to ask would be, What harm does it do to the stomach if the food stays longer than seven hours, say, ten or twelve hours, once the pylorus is patent and the food is finally delivered into the intestines for the utilization by the body economy? The answer follows. The stomach is an organ that needs rest. I consider this an axiom. To any skeptic who may argue against it, I will merely mention the wholesome and beneficial effects upon the stomach by sparing it from work. Fasting, milk diet, and

rectal feeding are examples of it. A healthy person eats his dinner at 6 or 7 p. m. By 12 or 1 p. m. the stomach is all through with its work, for the actual time for a healthy stomach to dispose of a regular dinner is only from five to six hours. Seven hours is the physiological limit. It, therefore, enjoys a rest for the most of the night during which time it recuperates its powers and lost energy, and is then ready for work again for breakfast. In the same manner it enjoys a rest after smaller meals, for a healthy stomach disposes of a smaller meal in from three to four hours. Contrast this with the state of affairs in an atonic stomach. At 1 or 2 p. m. the stomach is hardly through with half its work. It keeps on grinding, churning, mixing and pushing the food. In its frantic endeavors to accomplish the task it secretes more and more acid (most of atonic stomachs suffer with excessive acidity) and gets parched by its own acid, and thus it keeps on working the whole night. Is it surprising that its host gets up in the morning unrefreshed, with a bad headache, a nasty taste in the mouth, and unpleasant sensations in the stomach? But the patient must go about his business pursuits and without any appetite, merely as a duty, he eats his breakfast and thus puts in a fresh load on his tired out, unrefreshed and unrecuperated stomach! Do you wonder that many a stomach would rebel at such a preposterous imposition and, there it goes, the whole breakfast is vomited up? The man with the healthy stomach always eats his meals on an empty stomach, while the man with the atonic stomach eats his meals on a full stomach. That's the difference; but that is not all. It was pointed out by the author elsewhere (6) that the hydrochloric acid of the stomach was not the chief bactericidal agency of the stomach, for in motor insufficiency with high acidity myriads of microorganisms abound, while on the other hand in stomach contents even of low acidities, provided the motility is normal, there are comparatively few microorganisms. It is, therefore, the normal motility that is the main safeguard against the development of microorganisms. The pernicious effects of stasis of food, of the food staying longer than the normal seven hours, becomes apparent. The contents reach the duodenum all right, but they reach there in a partly fermented and decomposed state, laden with microorganisms and charged with organic acids.

Pathology: In order to understand the pathology of atony of the stomach we must have a clear idea of the means by which the stomach empties itself of the food contents. This includes two factors: the peristaltic movements of the stomach and the opening and closure of the pylorus.

The movements of the stomach. Up to about twelve years ago our ideas about the movements of the stomach presented a mass of most conflicting and perplexing testimonials. The reason being that the observations carried on were always, under pathological conditions. Hofmeister and Schütz (7) have made their observations of the movements of the stomach by removing the stomach from the abdominal cavity and placing the stomach in a warm moist chamber. The movements go on for about two hours.

Schwartz's observations (8) were carried on anæsthetized animals. It was proved later than an anæsthetic alters the movements of the stomach entirely.

Rossbach (9) carried on his studies on animals under the influence of curare and opium.

Beaumont (10) carried on his well known and classical work on the Canadian St. Martin, who had a gastric fistula, by means of a thermometer within the fistula and by watching the movements of the thermometer. A gastric fistula, however, means an adhesion between the stomach wall and the abdominal wall. The stomach would certainly be inhibited under such conditions from exercising its normal physiological functions.

Auer and Cannon have both carried on their work under perfectly normal conditions. Auer (11) has shown that by clipping the hair over the stomach region of a rabbit short and then stretching the animal on its back, the peristaltic movements of the stomach are fairly visible. To Walter B. Cannon, of Harvard University, belongs the credit of having placed the physiology of the movements of the stomach on a sound basis. Cannon made his observations on cats. He mixed their food with bismuth subnitrate and studied then the stomach with the x rays. Bismuth subnitrate, as is well known, is impenetrable to the x rays and thus the food becomes visible. Cannon (12) has established the following facts. The stomach is divided both anatomically and physiologically into two parts, the cardiac portion and the pyloric antrum portion. At the antrum the musculature is much better developed than in the cardiac part. The cardiac part acts in the first part of digestion merely as a storehouse for the food, and no movements are going on there. In the latter part, however, some contractions are present, as will be pointed out later. The main seat of the movements of the stomach is in the antrum. A peristaltic wave commences at the beginning of the antrum and travels toward the pylorus. A wave starts by a contraction at the commencement of the antrum of the circular fibres of the antrum. The lumen of the antrum becomes thus reduced at the spot of the contraction to a very small ring. This contracted ring travels in the direction of the pylorus. As the ring advances toward the pylorus, the circular fibres behind it relax and since the fibres in front of it are also relaxed, the peristaltic wave naturally consists of gradually advancing two crests with a trough between. Long before, however, the wave which is moving at a slow rate has reached the pylorus, another wave starts at the antrum and still another, etc. In this way a series of waves sweeps over the antrum at the same time. The waves at the antrum start in the case of the cat with a very marked regularity of every ten seconds. As digestion progresses more and more the antrum elongates and becomes larger in size and this gives a chance for more and more food to be subjected to the pressure effects of the pylorus. As this stage of digestion is reached the cardiac half ceases to be a mere passive storehouse and lends a helping hand to the hard working antrum. It contracts, it flattens out, the anterior and posterior walls approach each other. But unlike the pylorus it is not swept by undulations, but it gets into a state of tonic contraction. This drives some of the contents into the an-

trum where it is subjected to the active peristaltic movements of that part. And as digestion progresses the cardiac part contracts more and more until finally it becomes entirely empty and the contents are confined to the antral part only.

The effect of these movements on the food is apparent. The narrow rings into which the antrum is being thrown drive the food toward the pyloric sphincter. But the latter does not open at each onrush of food, but merely occasionally, governed by laws that will be discussed later. As the pylorus opens some of the food is driven through the pylorus into the duodenum. When, however, the pylorus is closed the food must recoil backward. This gives a constant to and fro movement to the contents; the contracting and relaxing rings impart kneading movements, and thus the food becomes ground up and mixed with the gastric juice. These observations of Cannon's on cats were corroborated by the same fluoroscope method on dogs and human beings by Roux and Bathazard (13).

In studying the motor powers of the stomach we must take cognizance of another factor, the opening and closure of the pylorus. Serdjukow (14), of Pawlow's school, discovered that there was a reflex present on the duodenal side of the pylorus, which on being touched by an acid closes immediately the pyloric sphincter. He has shown this experimentally by using a dog with a fistula on the duodenal side of the pylorus. By constantly putting in acid he could keep the pylorus closed indefinitely. This was corroborated by Hirsch (15) and Tobler (16). The *modus operandi* of opening the pylorus was shown recently by a series of ingenious experiments conducted by Cannon (17) to reside in a reflex on the stomach side of the pyloric sphincter. In this, again, the same acid plays the part. Free acid coming in contact with the pylorus causes it to open up. The reflex was shown to be a local one in the plexus of Auerbach, and not being connected with the central nervous system. The modus operandi, therefore, of opening and closure of the pylorus would be as follows: As soon as free acid appears near the pyloric sphincter the latter opens up, and then some food propelled by the contraction of the pyloric waves leaves the stomach and enters the duodenum. Here on the duodenal side the free acid has the opposite effect and the pylorus closes up at once. Soon the pancreatic secretion and the bile neutralize the free acid, and the closing effect of the duodenal reflex is abolished. This gives again the free acid a chance to act on the stomach side, and the pylorus opens once more to leave some contents out and soon closes up again. This goes on until the end of digestion. The food, therefore, leaves the stomach only a little at a time, and this keeps up from the moment of the appearance of free hydrochloric acid. It is self understood that the food does not start to pass out of the stomach until after some time from the ingestion of the food, for the first acid of the stomach combines with the food, forming combined acid, and not until all the affinities of the food for acid have been satisfied does the acid remain as free acid, which free acid alone has the power of opening the pylorus. It is evident that different food stuffs leave the stomach at different rates, since the binding powers of the food stuffs for free hydrochloric acid is not in all alike, as, for instance, proteins bind much more hydrochloric acid than carbohydrates, and hence free acid will appear later with a protein meal than a carbohydrate meal.

In applying the foregoing physiological facts to the pathology of atony of the stomach, we shall find that disturbances in the motility of the stomach must rest either with the movements of the stomach or with disturbances in the mechanism governing the opening and closure of the pyloric sphincter. Whether the inhibition of the movements of the stomach in a given case is at fault, or whether the trouble is due to disturbances in the mechanism of opening and closure of the pylorus is at this state of our knowledge impossible to say. Some hint may occasionally be gained in lavage, when we see the water running in slowly, which may point to a good resistance of the stomach muscle and on the other hand the water running out fast with good propulsive power will point to a good integrity of the muscle wall. The trouble, therefore, under these circumstances would imply more to be confined to the opening and closure of the pylorus. Even this, however, is by no means final, for it is easy to comprehend that a muscle may be in perfect tone and still devoid of movements. The observations of Cannon (18) on the effect of emotions upon the movements of the stomach, whereby under emotions the movements cease, prove this most beautifully. One would be apt to think that the size of the stomach ought to be a guide in distinguishing whether the stasis of food is due to impaired movements of the stomach or to abnormities in the functioning of the pylorus. As a matter of fact we find very little encouragement in that direction, for the term "dilated stomach" is an abstract idea and not something definite. Nobody can tell by the size of the stomach whether it is dilated or not, for stomachs vary considerably in size in different individuals. There is a condition called megalogastria, i. e., a physiological big stomach. The only way of telling whether a big stomach is dilated or physiologically big, is by observing its physiological work. If the motor powers of the stomach are normal, that stomach, no matter what is its size, is not dilated. If, however, there is stasis of food it is dilated. A goodly number of cases of atony are accompanied by some dilatation. Others are not dilated. While other writers report very marked cases of dilatation in atony, I have not seen them, and sincerely believe them to have been cases of mistaken identity. To my mind marked dilatation cases are seen in pyloric obstruction only. In those cases where the stasis of food is due to a disturbance in the mechanism governing the proper opening of the pylorus, atony, of course, would be a misnomer, but at this stage of our knowledge of the diseases of the stomach we cannot tell which of the two factors is at fault in a given case, and hence they must be classified for the present together. It will, probably, be left to improved technique in the fluoroscope to differentiate these two conditions.

Ætiology: There is no doubt that there exists a predisposing factor, a congenital weak stomach. There is also an acquired weakness of the stomach wall. Errors in diet are the most common causes

of atony. These errors in diet unquestionably start in infancy. Overfeeding would be the most common and most important of errors in diet. Overfeeding causes distention of the stomach which gradually leads to a loss of its muscular tone. Overfeeding in children is extremely common. It is also very common in adults. Ingestion of large quantities of liquid is an important ætiological factor. Liquids are heavy and they pull down the greater curvature. The pylorus being fixed, the food then in order to get through, must travel up an inclined plane against gravity. Beer drinkers, excessive drinking of coffee, tea, and similar beverages, also excessive drinking of cold water in summer time, are causative in the production of atony, provided the ingestion of the liquids is in large quantities at the time. Excessive milk cures have sometimes led to the development of atony of the stomach. Violent emotional disturbances, in the light of recent studies in the physiology of the movements of the stomach, must be looked upon as contributing a goodly number of victims of atony. It was observed by Cannon (19) time and again that in a cat, while under observation, if suddenly brought into a state of rage, the peristaltic movements of the stomach would cease at once. In fact in male cats the movements were not to be seen at all, and that was found out later to be due to the fact that the male cats would not tolerate to be placed in the holder for observation, and would get into a state of violent rage. From these facts it is easy to infer that people with especially nervous temperament; continuous state of worry, grief, rage, and aggravation lead to development of atony. Poor mastication of food due either to deficiency in teeth or faulty habits would lead in some cases to atony. The food being swallowed in big chunks is not let through the pylorus until comminuted by the stomach. Cannon (20) has seen repeatedly this discriminating faculty of the pylorus, and the big chunks would be driven back until ground down by the stomach. Such food, therefore, is apt to stay longer in the stomach. I must add, however, right here, that chronic gastritis is the much more common diseased sequel of deficient teeth and faulty mastication than atony of the stomach. Acute dilatations of the stomach have attracted recently considerable attention as following surgical operations. It is a temporary paresis of the muscular wall of the stomach and, unless recognized and treated properly, leads to the gravest consequences. It is very conceivable that it occurs in other than postoperative cases, and that a good many of the severe indigestion or so called ptomaine poisoning cases, are cases of this character. That cases of acute dilatation after restitution should be followed by an atony of the stomach is a most natural state of affairs. Obstruction of the pylorus leads to a secondary atony and dilatation of the stomach. It is, however, evident that the dilatation is secondary and not primary, since in most of the cases an hypertrophy of the wall attends the dilatation which is evidenced by the strong muscular contractions, the peristaltic movements, which are so characteristic of pyloric obstruction. This kind of atony is not, however, within the scope of our work and reminds one of the cardiac lesion which leads to secondary dilatation and then hypertrophy of the ventricle.

Symptoms: These are as variable as the faces of the patients that come to us. Every patient presents his own history and no two of them are alike. The majority of the patients present ordinary dyspeptic symptoms. A large number of patients give the symptoms of excessive acidity with which these patients usually suffer, as the stasis of food causes the stomach to secrete gastric juice. Some patients present neurasthenic histories. Here are some of the symptoms that these patients may suffer from: Sensations of heaviness or pressure after meals. Also all kinds of unpleasant sensations after meals. Distention of the stomach following meals. Loss of appetite. Heart burn and some pain or cramps between one and four hours after meals, sour eructations; nausea; vomiting is rare. Pain in the epigastrium and also at either shoulder or between the shoulders. Belching of gas is rather a common symptom. The symptoms usually depend on the quantity and quality of the food. Abstention of food or lighter meals make them feel better. On the other hand heavier meals or more indigestible foods make them feel worse. Poor appetite; weakness. Bowels are usually constipated. Objectively we usually find the patient slightly underfed. He may be somewhat anæmic. The stomach may show nothing distinctive or the stomach area may be somewhat distended. There may be a tympanitic note all over the stomach area, so that the stomach may be readily outlined by its own tympany. This means distention by gas generated within the stomach. On the other hand, the gas may have been aspirated from the air. The tympany may show the lower border as low as the navel or even slightly below it with the upper border at the normal level of the stomach. There is apt to be a very easily produced splashing sound over a fairly extensive area of the abdominal space. I must, however, caution right here that the prevailing idea amongst a good many, that the production of the splashing sound means atony is erroneous, as the splashing sound means merely the presence of air and liquid in the stomach, and is a perfectly normal phenomenon (21). When, however, it is very easily produced, at the least touch with the finger and over a fairly extensive area it may point to atony. The colon is usually full and contents are apt to be felt in the cæcum. The examination of the stomach contents after an Ewald test breakfast will usually show more or less marked excessive acidity. The contents often separate into three layers, a layer of solids at the bottom and top and a layer of liquid between. By giving a full meal and washing out the stomach seven hours later we find a goodly quantity of food in the stomach. On inflation or by other methods that determine the size and position of the stomach, the latter is more likely to be slightly distended. I have said that excessive acidity is very apt to accompany atony. We meet, however, every now and then some cases with subacidity or even entire loss of acidity, chronic gastritis cases with atony. Chronic gastritis and anacid cases have usually excellent motor powers. They usually expel the contents into the duodenum in a much shorter time than normal persons. Any one who tries in these cases without acid to extract an Ewald test breakfast in an hour will be bitterly disappointed, for he will find nothing in the stomach. This rapidity of drainage is supposed to be pro-

visional in nature. The stomach, whose protein digestion here is almost nil, adapts itself to the circumstances and hastily discharges the contents into the duodenum, where the intestines act vicariously and perform the work not only of themselves, but of the stomach as well. A person, therefore, who is suffering with entire absence of acidity, which usually also means apepsia, when in addition to it he has an atony, is in a very sad and tragic plight indeed, by being bereft of his greatest asset, the normal motility of the stomach.

Reviewing the symptomatology of atony of the stomach as outlined here, it becomes apparent, that there is no single symptom or even a group of symptoms that is characteristic of that particular disease. A lot of people suffering with atony give typical neurasthenic histories. And the atony is very often the cause of the persisting neurasthenia. On the other hand, the atony may also be the result of the neurasthenic state. It is, therefore, my habit in any case that presents any stomach history or even in cases that give no stomach history at all, but where careful physical examination of all the other organs proves negative, to look for atony. Fortunately the diagnosis is most simple, easy, and most reliable. I will append a few histories of cases of atony from my book, and, I think, they will illustrate better and impress more the symptoms, than any classification that I may give.

Case I. M. G.; clerk; twenty-eight years; single. Habits normal.

Family history. Father died of paralytic stroke. Brother died of nephritis at the age of thirty-five.

Past history. Patient had to diet himself from childhood. Chiefly meats would not agree with him. He was operated upon in July of 1906 for renal calculus.

Present history. Felt very bad since August, 1906. He suffered from pressure and fulness in epigastrium after meals; no heart burn; peculiar taste in his mouth. Pain over left kidney region. Belched a good deal. Did not relish his food at all. His symptoms became very much aggravated at the ingestion of meats, seasoned foods, and sharp condiments. He seldom ate a meal without having cramps afterward. Bowels regular. Appetite very poor.

Physical examination: The examination of heart, lungs, arteries, liver, and spleen was negative. Marked splashing sound over the stomach area. Urine contained phosphates and an occasional pus cell. Teeth were in good shape. Weight, 125 pounds. Examination of stomach contents in gross showed to be watery. There was a large quantity of it. It separated into three layers. Fat globules floated around. Microscopical: Starch, fat globules, yeast; no sarcinæ. Chemical examination showed on several tests free acid which varied between 40 and 60; total acidity, 68 to 120; lactic acid, none. Starch digestion poor, amylodextrin. Position of the stomach was normal, its size somewhat enlarged. Lower border extended to the navel. Upper border at the normal level. Motility subnormal. Stomach showed after repeated examinations quite some food to be present seven hours after a meal. Stomach was empty in the morning on a fasting stomach after a supper the previous night.

Case II. E. P.; male; plumber; twenty-two years of age. Habits—Used alcohol and tobacco a good deal; also coffee and tea. Used to go on the race track.

Family history was negative.

Past history. Pneumonia twice at six months and four and one half years of age.

Present history. For past three years patient had been very nervous. Belched a lot of gas. Had pains all over his body and was "all broken up." Cold hands and feet. Had not got strength enough to work. Bowels were constipated. Appetite was very poor.

Physical examination: Tall young man. Very thin and pale. Languid and irritable. Examination of heart, lungs, liver, spleen, arteries, and urine was negative. Stomach contents showed excessive acidity. Contents separated into three layers. Lower border of the stomach was somewhat below the navel. Upper border normal A lot of food was present seven hours after a meal. Stomach was examined again in the morning in fasting condition after a supper on the previous evening and quite some food was found. Microscopical examination showed the contents to be mostly fat; muscle; starch; some yeast. No microorganisms. Patient weighed on March 17, 1909, 123 pounds. April 9, 1909, weighed 133 pounds. April 26, 1909, patient felt ever so much better. Being an out of town man he went home.

This patient was a most typical case of neurasthenic. His trouble was diagnosticated as such by every physician including the writer at the first examination. Having tried a large number of physicians without relief he drifted off finally to the Emmanuel movement in a local church.

Case III. J. H.; male; seventeen years of age; schoolboy. Came for treatment July 1, 1909.

Habits: Normal.

Family history: Father had nervous trouble.

Past history, negative. Suffered from headaches at times.

Present history: Patient had stomach trouble for the past four months, with diarrhœa and pains in the stomach. For past two weeks diarrhœa passed away and constipation supervened. Ingestion of food aggravated the pain. Passed a lot of gas. Appetite was poor.

Physical examination: Fairly well nourished boy. Examination of heart, lungs, and urine was negative. Seven and three quarter hours after a meal stomach showed a lot of food. Lower border of the stomach at the navel. Upper border at normal level. Stomach somewhat enlarged. Acidity normal.

July 13, 1909. Patient felt very well indeed now. Seven hours after a meal stomach showed no food at all.

Case IV. G. F. S.; male; fifty-four and one half years of age; painter. Habits: No alcoholics. Six cups of tea daily. Not much coffee. Was in the habit of eating in a hurry. Ate his food very hot and cold. Teeth in poor shape.

Family history, unknown. Brothers and sisters died young.

Past history: Scarlet fever twice at ages of four and twenty-eight. Pneumonia twice. Typhoid and malaria.

Present history: For about six years patient had had attacks of vomiting which would last for several days. The vomiting would be occasioned chiefly by indiscretions in diet. He would vomit about four hours after meals. For past three weeks condition became considerably aggravated. He vomited after each meal, and large quantities. Never vomited blood. No cough, but expectorated a good deal.

Physical examination: Patient was rather underfed. Lungs on right side showed an old tuberculous lesion. Examination of heart was negative. Arteriosclerosis. Stomach was dilated with lower border at one and one half inches below the navel and upper border at normal level. Eight hours after a meal stomach showed a large quantity of food. The stomach showed subsequently a good deal of food even in the morning on an empty stomach after a supper the night before. The pylorus could be felt a couple of times, most likely due to spasm. Weight, 118¼ pounds. This case was a borderland case between atony and pyloric obstruction. The patient made, however, a perfect recovery, and on October 7, 1909, was discharged as completely cured, free from all symptoms, without any residual food whatsoever seven hours after a dinner and a gain in flesh of eleven and three quarter pounds.

Case V. This is a most remarkable history. I was called to see on July 21, 1908. F. S., female, age twenty, single, bookkeeper, who presented the following history. Had had some palpitation, dyspnœa, and pains about the heart for six years, and suffered from some digestive disturbances, such as heartburn and belching. Chief complaint was palpitation. Patient was treated during that time by some of the best clinicians in the city with a diagnosis of most of them as "heart disease," "anæmia," and "nervousness." For the past four weeks the patient had been confined to her bed with very aggravated palpitation and pain about her heart. She could not walk, on account of the palpitation, and felt very miserable. Total anorexia. Bowels constipated.

Physical examination: Color good, but rather underfed. Examination of lungs was negative. Heart rather tumultuous. No murmur. Blood showed some anæmia, otherwise negative. A primary disease of the stomach never occurred to me in this case and I made up my mind, that this was either a case of cardiac neurosis or a cardiac lesion without a murmur. A tonic plan of treatment improved her somewhat, and a sojourn to the country was advised, where she improved a little more. She was, however, very far from well. On September 29, 1908, patient presented herself to my office in the evening telling me that she felt very wretched with same old train of symptoms. On examining the patient again, as a matter of habit, I splashed her stomach. I questioned the patient as to the time of her last meal and she informed me that she had nothing that day, but a half cup of milk at 8 a. m. The splashing in the stomach meant some contents there at a time when it should have been empty, since the patient had nothing that day. I introduced a stomach tube and obtained some food. My attention was immediately drawn to the stomach. A stomach analysis was made with the following results: Contents after an Ewald test breakfast showed in gross to be profuse in quantity; very watery with starch granules falling to the bottom. Free hydrochloric acid, 60 to 72; total acidity, 80 to 94. No lactic acid. Starch, amylodextrin. Seven and three quarter hours after a dinner stomach showed a very abundant residue of food. The test was repeated once more with the same result. Size of stomach normal, the lower border extending to three quarters of an inch above the navel. The diagnosis of atony of the stomach was made. Treatment instituted brought marvellous results. The patient gained flesh. She stayed in perfect health and had no recourse whatsoever to doctor or medicine. Here it seems the formation of gas was pressing on the heart and gave her the annoying cardiac symptoms simulating heart disease and obscuring the real gastric symptoms.

(To be concluded.)

A CRITICAL REVIEW OF EXISTING THEORIES AND THE PRESENTATION OF A NEW THEORY OF THE ÆTIOLOGY OF ACHYLIA GASTRICA.*

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The purpose of this paper is to attempt to clarify our conception of achylia gastrica by presenting certain original observations which I have made during the past several years in my work in diseases of the digestive organs. A perusal of the various textbooks on diseases of the stomach reveals the great perplexity of their authors in attempting to describe the ætiology and pathological evolution of this, one of the important diseases of an important organ.

Achylia gastrica means gastric juicelessness and denotes the essential feature of the disease, making impossible the digestion of proteids in the stomach. It has been studied by Flint, Fenwick, Nothnagel, Ewald, Lewy, Boas, Jaworski, Litten, Hammerschlag, Einhorn, Eisenlohr, Schmidt, Martius, Meyer, Jones, Stewart, Kinnicutt, Hemmeter, Riegel, Rose, etc. The disease has borne several synonyms, as atrophy of the stomach, atrophic gastritis, anadenia ventriculi, phthisis ventriculi, anacidity, apepsia, and nervous inacidity, all suggesting the existing atrophy of gastric glands or the disappearance of gastric juice but none so truly descriptive and generally applicable as the term achylia gastrica, suggested by Einhorn in 1892.

The first papers pertaining to this disease were written by Flint and by Fenwick, who described cases of pernicious anæmia in which there was an atrophy of the gastric mucous membrane with disappearance of the glands. Regarding the atrophy with absence of secretion and the anæmia it was formerly considered uncertain which was cause and which effect. The former was rather supposed to cause the latter. But it soon became well known that a form of achylia may exist without causing fatal anæmia or even great impairment of the general health. Let us look over some of the theories of achylia.

Riegel holds that achylia gastrica is a secondary disease and divides the cases into two groups, one being the result of organic diseases of the gastric mucosa, the other being the result of constitutional nervous diseases. He discusses both cases in which the secretion is completely lost (achylia) and also cases in which it is only diminished (hypochylia), and states that in the majority of cases which have thus far been studied the production of gastric juice is merely decreased, not inhibited. He adds that rarely nervous achylia and hypochylia may possibly be considered primary independent secretory neuroses. The organic form which follows atrophy of the mucosa he calls primary, and the achylia which follows carcinoma (sometimes early but usually late), the various forms of chronic gastritis, diabetes mellitus, cirrhosis of the liver, pernicious anæmia, amyloid degeneration, and diseases of remote organs, he calls secondary. Microscopical examination shows that the glandular elements are completely or almost completely lost, but he mentions no microscopical distinctive signs between the primary and the secondary forms of atrophy. According to Riegel nervous achylia or hypochylia occurs in the absence of all organic gastric diseases and is seen almost exclusively in hysteria and neurasthenia and occasionally in certain spinal diseases, notably tabes.

Boas divides achylia gastrica into two classes, the organic and the nervous. The organic form may either be due to idiopathic atrophy of the gastric glands or may complicate other organic gastric diseases. The nervous form appears as a neurosis, the absence of secretion being a functional disturbance. He states that the purely nervous variety is rare.

Einhorn includes in his definition of achylia gastrica only cases in which there is total and permanent absence of secretion but still he mentions transient cases. He describes a severe form (consisting chiefly of cases of pernicious anæmia and chronic gastritis) in which there is atrophy of the mucosa, and a mild form in which atrophy is usually only conjectured and which, perhaps, develops in consequence of nervous disturbances. He examined the stomach of one subject microscopically and found complete atrophy of the glands. He found fragments from stomachs of living patients in conditions ranging from apparent health to atrophy. He is of the opinion that many cases of achylia exist without lesion of the mucosa.

Hemmeter says that achylia gastrica represents an absolute and permanent loss of secretory function. He recognizes three types: First, primary, idiopathic, possibly inherited achylia; second, the acquired or secondary achylia; third, nervous achy-

*Read by request before the Medical Society of the County of Oneida, at Utica, N. Y., April 12, 1910.

lia which may be either congenital or acquired in consequence of some organic gastric disease. He states that the primary idiopathic form is characterized by the fact that absence of secretion is evident before any marked anatomical changes have occurred in the mucosa which could explain the loss of function. It is, therefore, not regarded as a result acquired from a real disease but as an individual peculiarity, possibly an inherited functional debility. He thinks that temporary achylia may be caused by a nervous excitement, but is inclined to think that permanent achylia is almost never of nervous origin. He thinks it probable that a more or less pronounced granular gastritis exists in the majority of cases. He suggests that this loss of the glandular apparatus is due to the increased vulnerability of the mucosa in the absence of the antiseptic action of hydrochloric acid in cases of primary idiopathic achylia, the atrophy being caused by germs. The structural changes need not therefore bear a proportional relation to the absolute gravity of the loss of function. There are accordingly gradual transitions from congenital simple achylia with but immaterial alterations of the mucosa to achylia with chronic gastritis eventuating in complete atrophy of the mucosa. In microscopical examination of stomachs shortly after death Hemmeter says that he found proliferation of interstitial connective tissue, the occurrence of acidophilic leucocytes, the disappearance of the specific glandular elements and cell proliferation emanating from the vestibules of the glands; also transformation of the gastric mucosa into intestinal mucosa. In the final stage he found complete atrophy of the mucosa.

Martius distinguishes three forms of achylia gastrica; first, simply achylia due to a primary secretory debility of the stomach and being either congenital or the result of some congenital predisposition, and chiefly found in neurasthenia; second, achylia due to atrophy of the gastric mucosa; third, functional achylia. In primary achylia the mucosa, on account of the lack of secretion, possesses less resisting power against deleterious external agencies, as bacteria, and anatomical changes of mild and severe degree that are in no proportion whatever to the achylia nearly always result. He asserts that a diagnosis of total atrophy is not always justifiable when achylia gastrica exists and also that it cannot be denied that at least occasionally achylia gastrica may be merely a perversion of function.

After making this brief review of these several theories let us shake them up together and we shall find that we may, disregarding minor differences, resolve achylia gastrica and atrophy of the gastric mucosa (using whichever term may be applicable to each separate theory) into a tripartite division as follows:—First, primary; second, secondary; and third, nervous. As it is agreed by all authors that the secondary form represents the terminal stage of definite, well known organic diseases of the stomach let us dismiss it for the present and proceed to the consideration of the primary and nervous forms. In examining the primary it will be noticed that some authors consider the atrophy to be the cause of the achylia, while others consider the achylia to be the antecedent of the atrophy. Such disparity of opinion at once indicates an uncertainty not only regarding the sequence of conditions but also regarding the causation. For the cause that gives rise to atrophy followed by achylia would not be very apt to give rise also to achylia followed by atrophy.

Riegel, in his discussion of the nature of atrophy, submerges the primary form in the secondary form. In regard to ætiology he says that it is frequently impossible to find the direct cause of the primary form but he not even suggests what may be in a single case the cause of it and he ends by confounding this primary form with a possible nervous form.

Boas, Hemmeter, and Martius think that primary atrophy or achylia gastrica is idiopathic, i. e., not produced by any preceding conditions. It just develops without cause. That reminds one of Topsy who said she was never born. She just grew. Boas and Hemmeter and we all should know that to declare a disease idiopathic is only a subterfuge by which science dodges the acknowledgment of ignorance.

Einhorn does not expressly mention what we have termed the primary form of achylia, and he seems to merge it into a possible nervous form.

Martius considers primary achylia to be either congenital or the result of some congenital predisposition. Hemmeter suggests that primary achylia may be inherited. However, not one case is mentioned in which the condition was either inherited or congenital. It is hardly to be supposed that achylia gastrica is transmitted by parents to children because in procreation a newly developing organ which is normally so abundantly supplied with secreting glands, as is the stomach, would be apt to have sufficient glands to yield some secretion. For this reason also it would not be apt to be even congenital, and it could not well be caused by parturition. Furthermore, achylia gastrica cannot be inherited because by multiplication from generation to generation it would be very much more prevalent than it now is. Again, if the condition were inherited or congenital, cases of it would appear early in life, whereas Riegel says it usually occurs in the middle and later years of life. Litten and Rosengart report one case occurring in a girl at the early age of eighteen years. Most of my cases appeared in the third and fourth decades. When it is said that achylia may be the result of some congenital predisposition, such an hypothetical causation is so extensive and unscientific as to be applicable to any malady whatsoever and even to death itself.

It seems to me that we may infer from the preceding deliberation that the so called primary form of atrophy or achylia gastrica cannot be idiopathic, inherited, congenital, or the result from a congenital predisposition. And we can therefore with reason question whether there is any such thing as a distinctive primary atrophy or achylia gastrica.

(It may be observed in passing, that Martius and Hemmeter have probably carelessly accused bacteria in their endeavor to show how their "idiopathic" primary achylia may be followed by atrophy. It is hardly to be supposed that pathogenic bacteria would act so selectively on the whole glandular structure without destroying the other gastric tissues and without febrile symptoms.)

Now, let us examine the theories of the nervous

form of this disease. Riegel says that we can establish the diagnosis of nervous hyposecretion and achylia gastrica only if all organic diseases of the stomach can be excluded and if positive signs of some nervous disorder, especially hysteria and neurasthenia, can be discovered. But he himself asserts with reason in another place that when all these requirements are present the diagnosis is only probable. And he speaks truly when he says in still another place that it is an open question whether inhibition of gastric secretion can occur after these nervous diseases. He and other authors admit, too, that cases have been known in which the supposedly causative nervous disorder was cured without improving in the least the achylia. His own statements invalidate his theory. It would be just as rational to declare that the achylia causes the nervous diseases. The coexistence of nervous diseases and achylia affirms no causative relations between them. Nervous achylia and hypochylia, he further states, can rarely be considered primary independent secretory neuroses and can be diagnosed as such only if they can be shown to exist after psychic shocks while the secretion is normal at all other times, but it is evident that this form of achylia is defined to be necessarily and restrictively temporary and does not come within the scope of our study.

Boas asserts that nervous achlyia exists as a gastric neurosis but is rare, for in nearly all cases some signs of a granulating gastritis can be detected. But it is highly improbable that even in these rare cases of it a strictly functional disturbance of nerves could uniformly cause a complete and permanent cessation of glandular activity.

Einhorn cautiously and even parenthetically suggests that "nervous disturbances" may cause in the gastric glands an inactivity which after a long persistence may gradually bring about their atrophy. This theory is too indeterminate to be scientific. Moreover, the considerable period elapsing between the beginning and the completion of the process would usually produce over a long period a gradual diminution in the amount of gastric juice secreted, a condition which is not very probable.

Hemmeter, in saying that nervous achylia may be either congenital or acquired in consequence of some organic gastric disease, is also uselessly indefinite. What I have already said of primary congenital achylia applies to this nervous form. Hemmeter disproves his own theory of nervous achylia by stating that he examined fragments of mucosa from fourteen cases and found degeneration of glands in all. He says that until he made those detailed examinations he supposed it was possible that this form of achylia might exist simply as a neurosis, because all the cases occurred in neuropathic patients, especially with hysteria and neurasthenia, which proved to be very insufficient ground for such opinion. As to his idea that hysteria is a cause of achylia it is difficult to imagine how there could be any causative relation between them. I have never even seen the two diseases in the same patient. He passes by without any comment whatever his statement that nervous achylia might be caused by some organic gastric disease. He neither mentions nor suggests any organic disease which might cause it and evidently regards his own idea as of little moment.

Martius merely suggests the possible occasional existence of a nervous achylia. But a complete and permanent achylia would not be very apt to be, as he suggests, a perversion of function. Treatment would at least at some time correct and improve the function of the glands so that they would produce some secretion.

From the foregoing considerations we are justified in inferring that so called nervous achylia gastrica has not been explained and even that its existence as a distinctive form has not been proved.

I feel certain that the writers on the subject of achylia gastrica will admit with a sense of relief that they have all engaged in a guessing match and that they have found no real ætiological basis for this disease and have made no scientific classification of it. Thus far we have recognized that, aside from achylia sometimes found with pernicious anæmia, there is an achylia due to well known organic stomach diseases, as cancer and chronic gastritis, which is called secondary achylia gastrica; and we have discovered that all other cases of achylia which have been variously classified as primary, idiopathic inherited, nervous, and so forth cannot be thus scientifically differentiated and may be for the nonce placed in one inclusive group which is best designated simply as achylia gastrica. Now we are confronted by the question what really is the ætiology of this latter group of cases, i. e., of what is usually known as achylia gastrica? Let us try to guess.

In my work in stomach diseases I have been much impressed by the observation that achylia gastrica without any usually well known organic disease of the mucosa is so frequently accompanied by gastroptosis. I recently examined the records of stomach cases in my private practice and in the stomach clinics with which I was formerly connected in New York city in order to select the cases of simple achylia gastrica. These records include over 1,700 consecutive cases, practically all of whom I examined or treated. These cases represent a total of over 8,000 separate stomach examinations. From what was said previously it may be realized that it is occasionally difficult to diagnosticate between simple and secondary achylia gastrica. Such is especially apt to be the case in clinical work where it is practically impossible to put into writing the complete history of every case and where the patient is not apt to be examined subsequently or may even soon disappear from observation. These records of cases were not made purposely for a study such as our present one. With considerable accuracy, however, I found seventeen cases of simple achylia gastrica, and ten of these patients had gastroptosis. Some authors describe cases of simple achylia gastrica which undoubtedly have also gastroptosis but they attach no importance to this fact. Riegel, in his chapter on the *secondary* form of achylia, very casually remarks: "In some cases the stomach is dilated, in other cases it is of normal size, and in still others it is smaller than normal. In several instances there was gastroptosis at the same time."

What relation can there be between simple achy-

lia gastrica and gastroptosis? It is impossible to surmise how a loss of gastric secretion or even an atrophy of the mucosa can cause a gastroptosis. But, on the other hand, can gastroptosis cause achylia gastrica? It may be interesting and instructive to look over the histories of two of my cases, for histories of such cases are rather rare.

Case I. December 24, 1906. Patient at Vanderbilt Clinic (No. 489). Married twenty-two years ago. Was in good health until over one year ago. She was then pregnant with her sixth child and her abdominal recti muscles separated widely allowing the gravid uterus and other abdominal contents to bulge forward. She experienced considerable pain and much discomfort. She had much nausea for three months but did not vomit. Her health became impaired. Bowels were regular. Was nervous. Physical examination showed gastroenteroptosis, double nephroptosis, hepatoptosis, and wide separation of recti muscles in their entire length. Examination of stomach contents after a test breakfast showed free hydrochloric acid, 0; total acidity, 22; lactic acid, 0; mucus, 0. There was some insufficiency of gastric musculature.

In this case the very marked general ptosis was undoubtedly due to the yielding of the abdominal wall and it may be surmised with considerable probability that the gastroptosis had something to do with causing the achylia.

Case II. July 25, 1903. Private patient. Thirty-seven years of age. Unmarried. Had diseases of childhood and then her health was good up to her eighteenth year when it began very slightly and gradually to deteriorate. Twelve years ago for several months she felt considerable weakness and had occasionally nausea. Eleven years ago, in the spring, she became sick with severe neurasthenia, stomach trouble, etc. She had much general weakness, almost constant headache, much palpitation and dyspnœa, occasional dizziness, feeling of "lump in the throat," sensitiveness to heat and cold, frequent dreams, easily produced numbness in extremities, spinal and intercostal tenderness, occasional discomfort in region of right kidney, and constant extreme nausea. Also had during that summer occasional attacks of vomiting beginning usually very early in the morning and sometimes after breakfast. At the earlier hour she sometimes did and sometimes did not vomit food, but probably always vomited bile. Each attack lasted about one day. Bowels that summer were loose. After meals, especially dinner, sometimes had griping which was followed by a movement. No distension with gas. No belching. No borborygmi. During that summer she had also much anorexia and frequently the sensation of great hunger. The following fall the nausea improved, but it still continued very annoying at times to date. Vomiting had been much less frequent. She remembered that the vomitus was sour for the first two and a half years and that it then became indifferent. She had never had any pain in her stomach, but for eleven years she had been in some disagreable way conscious of her stomach, especially just after meals when there was a heaviness. For the first six years the feeling in her stomach often amounted to great discomfort. Often had a very "tired" feeling in the abdomen. Had also an "all gone, empty" feeling there. A gnawing sensation had usually occurred about two hours after meals, relieved by food or fluids but apt to recur in another two hours. All these feelings were habitually relieved by food, without which great weakness and sometimes faintness would be experienced. During the last one or two years patient has experienced much painful sensitiveness of ears, eyes, muscles, and of knee, ankle, and wrist joints. Bowels since the first year of the sickness have not been too loose, but active. Patient had been under doctor's care during preceding eleven years.

Physical examination showed nervous heart, right kidney descended to third degree and tenderness in epigastrium. Examination of test breakfast showed free hydrochloric acid, 0; total acidity, from 9 to 16; lactic acid, 0; maltose, mucus, 0. Acidity could not be increased by transabdominal galvanic current, as some state. Contents after Riegel meal showed free hydrochloric acid, 0; total acidity, from 50 to 60. Greater curvature of stomach three fingerbreadths below umbilicus, there being considerable gastroptosis and moderate dilatation. Hæmoglobin, eighty per cent. Patient placed under treatment and improved in four months from practical prostration to a comfortable condition.

June, 1904, examination of stomach contents showed same condition as in preceding year. Physical examination showed left kidney also descended.

March 6, 1910. Patient still moderately neuræsthenic but enjoying quite good general health and strength, and remained in this condition so long as he did not overdo and avoided a stooping posture, which presses the descended kidneys downward and kinks the ureters. Had not had an attack of vomiting in two years but had occasional nausea. Gastroptosis and nephroptosis as previously. Examination of stomach contents after a test breakfast showed free hydrochloric acid, 0; total acidity, 15; lactic acid, 0; maltose, mucus, 0; propeptone, 0; peptone, 0; pepsin, 0; pepsinogen, 0; renin, 0; renin zymogen, 0. To ascertain the acidity of bread used in this meal I made a control test by soaking a test breakfast in a dish for an hour and found its acidity to be 10. The difference of the 5 between the meal in the stomach and that in the dish being due to the evacuation of some of the water from the stomach before the acid had become soaked out of the bread and to the greater degree of comminution of the stomach meal caused by the digestion of its starch. Several such tests showed that test breakfasts in the dish had a total acid index equal to two thirds that of the stomach breakfasts of this patient. (In a check examination of a Riegel meal I obtained a total acidity of 55.) More acid existed in the usual test meals than is generally supposed.

In this last case the following points are noteworthy: First, the simultaneous development of neurasthenia, discomfort about right kidney, and stomach trouble, most marked symptom of the last being constant extreme nausea; second, achylia appeared, judging from change in taste of vomitus, after a period sufficiently long for gastroptosis to have taken place; third, the severe neurasthenia, although continuing for eleven years, improved much with proper treatment; fourth, the achylia and gastroptosis are known to have been unimproved by treatment for a period of seven years; fifth, the neurasthenia probably did not cause the achylia because as the former improved the latter did not improve; sixth the achylia probably did not cause the neurasthenia for absence of improvement in the former did not prevent improvement in the latter.

It is significant not only that achylia is often associated with gastroptosis but also that they occur at about the same age and most frequently in the female sex. Let us now consider how gastroptosis may cause achylia gastrica. The tissues that would be primarily affected by a gastroptosis are the so called ligaments of the stomach, its extremities and walls, its bloodvessels, and its nerves.

Relaxation of the ligaments could not well cause achylia. The stretching of the bloodvessels might be thought to be a possible cause. Hemmeter found in autopsies on two subjects who had shown the symptoms of achylia but whose stomachs showed no atrophy that the celiac axis and all its branches were of unusually small size. But in these cases we must suppose that if the blood supply was sufficient to maintain the integrity of the stomach walls and even of the glandular elements it was sufficient to allow the production of at least some secretion. Arteries, too, are so elastic in every direction and the blood pressure is so great where the celiac axis arises from the abdominal aorta that a sufficient supply of blood would probably be delivered even through small calibres.

The displacement of the cardia and the pylorus in gastroptosis cannot (alone) be supposed to be

causes of achylia. There is no good evidence indicating that achylia is ever due to the stretching of the walls of the body of the stomach.

The stretching of the nerves would seem to be a possible cause. The nerves that might be affected are the right and left vagi and the splanchnic fibres from the solar plexus of the sympathetic. Although we have quite distinct knowledge about some points in the anatomy and physiology of the vagi and the autonomic or sympathetic system there are many important points on which our knowledge of these two sets of nerves is a jumble or a void. This is true regarding the subject of the nerve supply of the stomach and its relation to secretion and other functions. However, it was long a supposition that secretion of gastric juice was regulated by nerve fibres and such a fact was positively demonstrated by Pawlow. He showed that the vagi are the secretory nerves for, by making an œsophogeal fistula in an animal and employing "sham feeding," the food being swallowed but all passing out through the artificial opening, none entering the stomach, there took place an abundant flow of gastric juice so long as the vagi were intact but secretion ceased after section of the vagi. Now when gastroptosis takes place the lower end of the œsophagus and the cardiac end of the stomach are stretched downward and the gastric branches of the vagi are also stretched. It would seem to be at least a plausible theory that, as a result, the axons of the vagi are gradually attenuated until rupture and degeneration occur, the lesion of course cutting off the function of the secretory fibres and causing total achylia. Autopsies on cases of simple achylia have been very few. Examinations of fragments from the gastric mucosa of living subjects have revealed the glandular apparatus in all conditions ranging from apparent health to total atrophy. So far as I am aware, I have never torn off a piece of mucosa during the extraction of a meal. However, if these are true microscopical pictures we may suppose that this variety in the condition of the mucous membrane would be explained by the length of time elapsed since the occurrence of the lesion in the vagi for the glandular elements would be supposed to degenerate more and more on account of cessation of function, especially if the vagi exercise a trophic influence over them. In other words, severance of the vagi would most satisfactorily explain the total lack of secretion which is found both when the mucous membrane is and is not atrophied. These paradoxical conditions have much puzzled the observers who have sought within the mucous membrane for an explanation of this disease. The irritation of the gradually developing lesion in the vagi could cause the persistent great nausea found in the early period of this disease in the two patients (especially the latter) whose history I have given and might reflexly cause the griping and diarrhœa. Likewise, the neurasthenia which was considered by some writers to be the cause of the achylia and by others to be the result of the achylia resolves itself naturally into a condition resulting from the same pathological conditions which caused the achylia. Such a parallel relation between the neurasthenia and the achylia, however, does not of course preclude the possibility that achylia may develop in patients who are already neurasthenic. In fact, this would be the rather natural tendency and it has long been a familiar fact to me that many visceral disturbances, especially ptoses, always cause neurasthenia. Furthermore, I have observed that those achylic patients who have visceral ptoses are extremely neurasthenic and that those who lack the ptoses are also but to a less degree neurasthenic.

If it is true, as suggested by my observations, that gastroptosis may cause lesions of continuity in the vagi which in turn cause achylia we may infer that achylia in cases not associated with gastroptosis is probably caused by the same lesions. Any disease or injury which destroys the secretory axons, e. g., a severe neuritis or a rupture from tension, would produce such lesions. The dependent position of the stomach within the pliable abdominal cavity subjects it, even in normal individuals, to downward traction. Some clinicians say that they have seen cases in which, after achylia had continued for several months secretion was reestablished. I have examined only a few cases a second time after the lapse of several months but have not found the recurrence of secretion. However, if secretion can be in total abeyance for a period and then appear again what more reasonable or possible explanation of the phenomenon can be offered than that the secretory nerve fibres have been the seat of injury or disease and that regeneration has taken place and therefore function restored? The occurrence of such a lesion in the vagi in the cases of achylia would indicate that the secretory fibres are rather vulnerable. Of course, it would be supposed that when the secretory fibres are torn apart the whole nerves would participate in the lesion but such need not necessarily be the condition especially if the secretory fibres leave the main trunks in such a way that they are subjected to greater tension.

Now let us see whether we find in other functions of the vagi in cases of achylia confirmatory evidence of our theory and while doing this let us bear in mind that much is still unknown in these matters.

The vagi contain besides secretory fibres sensory and motor fibres. The sensory carry impulses from the gastric mucous membrane to the brain and would be supposed to be the fibres chiefly concerned in the production of nausea. However, remember the familiar fact that disagreeable emotions, disturbances of sense of equilibrium, irritation of the various parts of the alimentary canal, disturbances of the genitourinary organs, liver or other viscera, etc., may all cause nausea. And still we realize that disease or irritation of the gastric mucous membrane is the most frequent cause of nausea. I think that the gastric mucosa in achylia is somewhat less sensitive than normally but still at least some of these patients do experience nausea when it is apparently due to intragastric disturbance, e. g., the ingestion of improper food. It is sometimes difficult to determine the point at which the disturbing stimulus is applied. An achylic patient of mine once took a small tablet of medicine. Immediately afterward she told me with a pale face that it had made her terribly sick. I marveled at the possibility, and asked her to drink some water. She did and the nausea at once disappeared, for the tablet then passed into the stomach from the œsophagus where it had lodged and caused the nausea. Nau-

sea in achylia sometimes seems to be due to the impinging of undigested pieces of food on the pylorus. Experimental distension of the stomach during examination can cause these patients some discomfort but here the sensory impulse could originate in the peritonæum. These patients can feel hot and cold drinks in their stomachs but here again the temperature may be transmitted to the peritonæum and the impulse of heat or cold may arise there. If, however, our theory is correct and if still the nausea of achylic patients can originate from stimulation of the gastric mucosa the sensory fibres of the vagi must be intact or, as is possible, the mucosa may be supplied by another as yet unknown centripetal nerve.

Would a lesion of the vagi destroying their motor fibres invalidate our theory? Although much remains to be learned regarding the nervous control of the movements of the stomach we may now answer this question in the negative with considerable certainty. The stomach, like the heart, is now considered to be an automatic organ. If it be severed from all nerves and indeed if it be extirpated from the body and kept warm and moist it will execute movements in orderly sequence. Its stimuli to movement arise within itself but whether its automaticity resides in its plain muscle tissue or in its intrinsic nerve ganglia (plexuses of Meissner and Auerbach) has not been decided. The extrinsic motor nerves, the vagi and the splanchnics, merely regulate the movements of the stomach and adapt them to varying conditions affecting the central nervous system. It has been proved that the vagi cause a contraction of the stomach including the pylorus and that the splanchnics are inhibitory, causing a dilatation of the contracted stomach and a relaxation of the pylorus. Moreover, according to some observers, the reverse fact is also true, namely, that the vagi contain some inhibitory fibres and the splanchnics some motor fibres. It may be stated furthermore that there are experiments which indicate that there are motor nerves of the stomach which have not yet been discovered. It may be concluded that lesions of the vagi would not destroy the motility of the stomach and perhaps would not altogether deprive it of fibres which regulate its contractions.

Some writers assert that in achylia gastrica the muscular activity of the stomach is increased. Such a condition would hardly be explicable whatever conception may be taken of the ætiology of the disease. I have never seen increased motility in achylia gastrica and the idea of its existence has doubtless arisen from the observation that the achylic stomach usually empties itself with comparative rapidity. Such result, however, is due to the patulous state of the pylorus as is proved in the examination of every uncomplicated case when it is found that air blown into the stomach passes with great rapidity into the intestine. This is just the condition that we should expect when, according to our theory, the predominantly tonic action of the vagi is cut off and the predominantly dilating action of the splanchics is being exerted.

It may be wondered how, when the motor fibres of the vagi are disabled, vomiting might be effected. This act of course usually rests on a reflex mechanism. We have already seen that almost any sensory nerve may convey the impulse which causes nausea. It might be supposed that the ejection of gastric contents is accomplished by contraction of the stomach and that the vagi, inasmuch as they cause contraction, would be the important efferent nerves. However, two other sets of efferent nerves are involved to a much greater extent, namely, the phrenics and several spinal nerves. Although the stomach itself may be more or less active in vomiting it may be perfectly passive without preventing the act. Magendie demonstrated this fact by extirpating the stomach and suturing to the œsophagus, in its place, a bladder filled with water, and then, by injection of an emetic, producing typical vomiting. Vomiting really is effected by the simultaneous spasmodic contraction of inspiratory and expiratory muscles, that is, of the diaphragm and the abdominal muscles. Thus we find again that lesions of the vagi do not interfere with such a complex gastric feat as vomiting.

It has also been suggested that disease of the intrinsic nerves or ganglia of Meissner and Auerbach might occasionally cause atrophy. But such a theory is still insufficient and does not bear directly enough upon the production of complete achylia which probably often exists without atrophy. It is hard to imagine what gastric disease would simultaneously destroy all the plexuses and all the nerve fibres within the stomach walls.

As regards the cases in which achylia gastrica occurs with some other disease future research may reveal that they have some common ætiological factor. If the suprarenal glands or other organs are involved in causing pernicious anæmia there may be lesions in their branches of the vagi like the lesions in the gastric branches. Some assert and some deny that the pancreas is innervated by the vagi. If it is true, a very probable cause of diabetes would be lesion of these vagus branches and support would be given to Popielski's failure to confirm Starling's experiments regarding intestinal secretion. The gastric crises as well as the occasional achylia which occur with tabes may be caused by an affection of the gastric branches of the vagi. A cirrhotic liver may have diseased vagus branches.

It seems to me that my theory which holds that achylia gastrica is caused by a lesion of the secretory axons of the vagus nerves best explains all the chemical and microscopical conditions and all the symptoms of the disease. Its proof or disproof depends on the increase of our knowledge through clinical observation, physiological experimentation, autopsy, and microscopical research.

BLOOD PRESSURE AND URANALYSES IN CHRONIC NEPHRITIS.*

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Judging by the small amount of literature in existence on the subject, it is evident that but little work has been done with a view of establishing any

*Read before the Northwestern Medical Society of Philadelphia, March, 1910.

relationship, directly or indirectly, between blood pressure and uranalyses, especially in the presence of albumin, tube casts, and the variable urea elimination occurring in chronic nephritis. A fairly comprehensive study of a considerable number of cases of this disease in which there seemed to exist a direct ratio between urea elimination and the blood pressure convinced me that the subject was one of more than ordinary interest and importance. I therefore commenced to study the cases more closely along the lines thus indicated, and made a number of comparative observations on healthy individuals, in whom the urea elimination was normal and the blood pressure practically so. Almost without exception a low urea elimination and a high blood pressure occurred in the diseased cases while no such relation existed in the healthy. In the cases under observation albumin and tube casts were intermittently present, sometimes one or the other alone and at other times both, and the uranalyses and blood pressure tests were made before, during, and after treatment. I will briefly report only two of the cases.

Case I. Mrs. H. B. W., age sixty-three years, had been a patient for twelve years and during all that time had had but very rarely any abnormal condition of the urine other than such as would be found in a subject of chronic gout and obesity. In January of this year she was suddenly seized with pains in the head, dizziness, an "all gone" feeling in the stomach, weakness, and trembling, and in general the symptoms were those of a "bilious" attack which the patient believed it to be. Night and morning and total quantity specimens of urine taken the following day showed albumin in all and an urea elimination of 1.3 per cent. Fearing that the albumin, especially in the absence of any casts, might be due to the leucocytes which were present, a catheterized specimen was obtained, but the albumin was still present, although the leucocytes were much fewer in number. From that time to the present albumin and tube casts have been invariably present, the first cast noticed being nine days after the attack, and then only one (a hyaline) being found. The blood pressure after the attack was 215 mm. but, under the influence of profuse sweating, the taking of large quantities of liquid, careful dieting, and the leading of a quiet life, the blood pressure became as low as 155 mm. and was rarely above 165 mm. While there had been no return of the so called bilious attacks, there were faint suggestions at times of a return of the pain in the head.

Case II. Mrs. A. H. K., age sixty-seven years, had been a patient for the past couple of years but for nothing more than attacks of influenza or so called biliousness. In the beginning of December of last year she was suddenly seized with an attack of partial unconsciousness, with almost entire loss of speech, while talking over the telephone. An uranalysis the following day showed albumin and tube casts, the quantity of urine being thirty-four ounces in twenty-four hours and the urea elimination 1.4 per cent. The blood pressure was 180 mm. and remained persistently high for some time. Lately it averaged from 140 to 155 mm. and the urea elimination varied between 0.5 per cent. and 1.7 per cent. The albumin and tube casts were at no time entirely absent from the urine, and, while there was no decided return of the symptoms with which the illness started, the slightest excitement would produce pains in the head and a feeling of unsteadiness in the gait. The same treatment was carried out as in Case I with practically the same results so far as the effect on the urine, especially the elimination of urea, and the blood pressure were concerned. In both cases there was a gradual loss of weight, which might be attributed to the restricted diet and the sweats since beginning the treatment.

Suspecting that possibly the eye might be involved either as a cause of or the result of the conditions present at the beginning of the attacks, many of my patients were carefully studied by Dr. Luther C. Peter, whose results appear in his own paper.

These two cases serve to illustrate a study, covering, as already stated, a large number of healthy individuals as well as those suffering from chronic nephritis, and the treatment in each and every case was practically identical, with the results equally so. The only marked difference in any of the patients was in Case II, in which an intermittent heart action developed, with occasional spells of dropping of beats, of which fact she herself was conscious, but from which she apparently experienced no inconvenience.

As to the cause for the apparent relationship between low urea elimination and high blood pressure, the most plausible theory is that the retaining within the system of accumulated quantities of urea causes a toxæmia which, in turn, stimulates the cardiovascular system and increases the blood pressure. On the other hand, of course, nothing is known in the patients so far studied as to what effect a pre-existing high blood pressure, if present, might have had in producing the renal condition which was doubtless the primary cause of the attacks for which I was consulted. That the two patients described were females, were neurotic, were past middle life, and were obese must all be taken into account; but the existence of a similar relationship between blood pressure and urea elimination having been noticed in cases where such factors could not be playing any part, in sickness and in health, would lead me to feel that but little, if any, importance should be attached to their existence.

As to the value of these observations, while admitting that the number of cases studied was not so very numerous and the period of observation was comparatively brief, yet having a knowledge of the previous health of each and every individual, including their renal conditions, one cannot help but feel that the sudden appearance of albumin, tube casts, low urea elimination, and high blood pressure with symptoms sufficiently alarming to send a "hurry up" call for the doctor, are factors to be considered collectively and especially in relation to each other. Even the comparatively limited amount of corroborative testimony afforded by these observations is sufficient, it seems to me, to demonstrate the necessity of taking the blood pressure with as much; if not more, regularity than the examination of the heart and urine, in all cases presenting unusual symptoms of sudden onset, and also places the study of the urea elimination and of blood pressure, especially in their relation to each other, in the front rank as a means of diagnosis and determining the results of treatment.

The treatment employed has practically been outlined in the foregoing, consisting as it did of two or three profuse sweats weekly, with careful dieting, an increase in the liquid intake, and the avoidance of nerve shock and strain.

Of course I am well aware that scientific accuracy would demand that the amount of nitrogen ingested be known; that one should determine whether or not there was an increase of urea in the blood at the time there was a diminution of this substance in the urine, and also that it be shown that nitrogen was not present in the urine in other

forms in sufficient amount to compensate for the diminished amount of urea, but the objects in presenting this paper, which at the most is but a brief preliminary report, and is naturally open to much more or less unanswerable criticism, are: 1. To call attention to the frequency and importance of the relationship existing between urea elimination and blood pressure. 2. To urge the more frequent microscopical examination of the urine in the absence of albumin. 3. To make the urea estimation a regular procedure in uranalyses. 4. To urge the more universal employment of the blood pressure test in the diagnosis and treatment of disease, especially the various toxæmias. 5. To stimulate comparative studies along the lines, as suggested in this paper, with the view and in the hope that, upon being able to determine the real value of the blood pressure test, both singly and relatively, we may thus secure an aid to the earlier diagnosis of conditions present than would be possible by the most careful physical examination and uranalysis.

I am indebted to Dr. Eugene J. Asnis, pathologist to the American Stomach Hospital, not only for his careful performance of the laboratory work in all my cases, but also for the valuable assistance rendered me by him in making the comparative studies.

1411 Spruce Street.

OPHTHALMIC STUDIES IN CHRONIC INTERSTITIAL NEPHRITIS.*

By Luther C. Peter, M. D.,
Philadelphia.

The studies for this paper have been limited to this chronic form of nephritis because the development of eye symptoms as a rule is insidious and lesions are rarely observed in their earliest manifestations except by accident. On the other hand, acute forms are so fulminating in type as to leave no excuse tenable for failure to have complete studies made.

In an eye clinic, where careful ophthalmoscopic studies are routinely made, it is interesting to note the number of cases of chronic nephritis, discovered in supposedly healthy individuals. This in no way reflects upon the man in general practice, for the average patient will ignore symptoms, which, if carefully sought after, may be elicited, because he thinks them to be unimportant or not of sufficient moment to consult a physician. It is not unusual to find patients, presenting themselves for errors of refraction, who show various degrees of retinal disturbance, from a mild retinitis to marked choked disc, and, in addition, on close questioning the usual constitutional symptoms, and only the gradual or sudden loss of vision caused them to apply for treatment.

The presence of eye ground changes in any case of chronic nephritis is an index of chronicity—the changes found being the result of long continued abnormal processes. Hæmorrhage, it is true, may make its appearance suddenly, but if one will carefully scan and interpret the pathological phenomena, sufficient evidence can be found in addition to hæmorrhages, to show that the changes are of long standing.

"Albuminuric retinitis" is a term which the medical student is taught early in his course as expressive of the sum total of the clinical eye phenomena which may be observed in chronic nephritis. The term is entirely misleading to student and practitioner in that it expresses but one phase of the eye phenomena of this disease, and was originally used to describe a typical picture observed in perhaps thirty per cent. of nephritics. Fortunately for the patient, it occurs in a minority of cases. There are, however, milder forms of disturbance relatively more frequent—conditions which may lead up to hæmorrhagic or albuminuric retinitis, conditions which in a measure may yield to treatment, or be held *in statu quo*. The term albuminuric retinitis, therefore, if used at all, should be used as a comprehensive term to include all the changes which may take place in the retina during the course of chronic Bright's disease, or the term nephritic retinitis might be employed as the generic term.

In a series of cases studied with Dr. H. Brooker Mills and independently, I found the most frequent form of ocular disturbance to be a mild retinitis, showing a haziness of the retina, a slight venous engorgment, beginning contraction of form fields, and usually considerable narrowing of color fields. Central vision in these cases is rarely disturbed. In others there is added a gradual involvment of the papilla, a beginning overcapillarity, haziness in outline, an increasing engorgment of the veins and slight contraction of the arteries, striation of the retina about the disc, and an occasional small hæmorrhage on the disc or in the retinal layers. In these cases central vision begins to show some loss, and fields for form and color show increasing contraction. If the neuroretinitis is progressive, hæmorrhages increase in number and size, atrophic areas make their appearance around the macula and disc, and gradually but surely that classic phenomenon to which the term albuminuric retinitis has been ascribed, makes its appearance. Blindness may suddenly appear as the result of hæmorrhage into the macular region. In a relatively small number of cases, an embolism into a branch or central artery may occur, or thrombosis of the vein may be the cause of sudden blindness. A final condition, and one which usually occurs very late in the disease, is typical papillitis or choked disc. This latter condition may be so marked as to suggest the papillitis seen in intracranial disease and associated with it may be found the so called albuminuric retinitis. Other conditions as involvement of choroid, retinal detachment, etc., may be observed but the conditions briefly described above are in the main the eye symptoms usually observed seriatim as given.

As to the immediate cause for these changes, whatever part the toxicity of the blood may play in their evolution, one fact stands out boldly and seems to stand in a direct and intimate relation thereto, namely, high arterial blood pressure. When we recall the anatomical relation of the arterial system of the eye and brain, namely, end arteries, and recall the fact that terminal arteries do not well withstand a great increase of blood pressure, it is not surprising to find these terminal vessels the first to

*Read before the Northwestern Medical Society of Philadelphia, March, 1910.

slow signs of disease. Fox and Batroff (*Colorado Medicine*, May, 1909) recently made a careful study of one hundred cases with a view to determine the relation between retinal hæmorrhage and high arterial pressure. The result of their studies is interesting in this connection in that the blood pressure in all the nephritic cases was uniformly high. My own observations fully confirm the conclusions of these writers, but my studies have been carried further—namely with a view to determine the relation between high blood pressure and the early eye phenomena in Bright's disease or the conditions which lead up to hæmorrhagic retinitis. It is interesting to note in these studies: 1. All cases examined, whether hæmorrhagic or otherwise, showed a uniformly high blood pressure, 150 mm. to 225 mm. of mercury as against 125 mm. to 135 mm., which might be regarded as normal variations. 2. In each case examined there were present some of the pathological eye conditions previously enumerated. 3. The severity of the eye conditions found, in a general way, bore a definite relation to the degree of increase in blood pressure. As for example, the cases of papillitis showed a blood prssure of from 200 to 225 mm., whereas a lower pressure was observed in those cases in which the milder forms of retinitis were present. If this latter observation is correct, one would naturally ask why, with an equal pressure of say 200 mm., one case may exhibit only a well marked neuroretinitis and another will present hæmorrhagic retinitis or a choked disc? The cause for difference in degree of damage depends, first, upon differences in individual resisting powers, second, upon the amount of arteriosclerosis present, and, third, upon age—old age usually predisposing to fragile arteries.

So uniform have these findings been that there seems to be little room for doubt as to the major part which high blood pressure plays in the eye changes in chronic interstitial nephritis.

A second point of interest, though not so well defined, is the relation of elimination, blood pressure and eye symptoms, or toxæmia. This study was made in reference to urea elimination only and in each case the laboratory examinations were made by Dr. Eugene J. Asnis. In the study of nitrogen elimination, one must take into account the diet, the activity of the skin and bowels, the total quantity of urine voided in a twenty-four hour period and the medication. The study is, therefore, a complex one and for merely practical purposes in our joint study, the tests were made with the patient leading, so far as possible, his normal life—on normal diet and without medication. Under these circumstances, a rather uniformly low elimination of urea was observed with high blood pressure and general toxic and eye symptoms as for example, headache, nausea, blurring of vision, etc. From our observations, it would seem that there is a more or less definite relation between nitrogen elimination, blood pressure, and toxæmia. The object of this paper is to point out this relation, leaving the working out of the theory to the scientific laboratory man and clinician. To express their relation, however, in definite terms, high blood pressure seems to be directly the cause of the pathological changes, although defective elimination may be responsible for the toxæmia. The fact that the same pathological findings, from a mild retinitis to choked disc and even the so called phenomena of albuminuric retinitis, may be observed in intracranial diseases, strengthens our belief that the urea elimination plays a minor rôle in the evolution of these changes and is more directly concerned with toxæmia. It is also interesting to note that eye phenomena of chronic parenchymatous nephritis are rare and that blood pressure in this form of nephritis is not much increased.

From an ophthalmic point of view, the question of prognosis both as to life and general improvement, and as to improvement in the eye condition, is of great interest. Whatever the eye condition may be even in its mildest form, one can safely say that when present the kidney condition is well advanced and of long standing. The prognosis, therefore, as to duration of life even in mild retinitis must be guarded. If the high blood pressure can be materially lowered and kept under control, if proper elimination can be established and hearty cooperation of an intelligent patient can be secured, one can offer the hope of perhaps years of comfort. If, however, the blood pressure remains uniformly high, the urea elimination persistently low and severe, hæmorrhagic forms of retinitis develop, the prognosis is correspondingly grave. When the characteristic albuminuric retinitis makes its appearance, ophthalmologists are apt to set a period of two years as the allotted span of life. This in many instances is correct, but some of these patients live for a much longer period. One specific instance which has come to my knowledge, has lived thirteen years beyond the two years allotted to her by an ophthalmologist of this city, and is even now in a fairly comfortable condition. Cases of pronounced papillitis with extensive hæmorrhages, perhaps offer a more nearly accurate index of approaching dissolution. Unless the patient is comparatively young, this latter eye condition is grave and the days of such a patient are numbered.

Prognosis as to the eye. Without treatment, the eye condition, as a rule, is progressive, passing gradually from a serous retinitis into the forms described earlier in the paper. You are all familiar with the sudden blindness from hæmorrhages into the macula, from thrombosis and embolism, and occasionally from detachment of the retina, but even gradual degenerative changes will slowly but surely bring about loss of vision. The need, therefore, of an early diagnosis and active treatment must be apparent.

The therapeutics of the eye symptoms and conditions are naturally those of the general condition. The eye is the only organ of the body in which the behavior of the arterial system in health and disease may be directly observed. It furnishes a visual demonstration of what is taking place in the general arterial system although minute lesions here may be more serious to the organ than the same phenomena may be in other parts of the body. From the conditions found in the eye, we can, therefore, definitely say, the indications primarily are to lower blood pressure and bring about elimination. It is hardly within the domain of this paper to go into the treatment except in a general way, the details of treat-

ment being left to the internist. The hot dry pack, and, in the more robust cases, the cabinet vapor bath, are the most effective means of bringing about elimination and of lowering blood pressure. In the average case, these measures, together with internal medication, suffice to keep the blood pressure within normal bounds. When, however, it is very high and there is impending danger either to the eye or brain, blood letting so strongly recommended by Fox and Batroff in their paper, may be resorted to with advantage, because of the promptness of the relief offered and its greater permanency. The amount of blood to be withdrawn should be determined by the height of the pressure, frequent tests being made during the operation to determine it. The good to be derived from these measures does not apply to the eye alone, but they are the keynote to the successful general management of the case.

In order to show more graphically the relation of eye conditions to blood pressure and urea elimination I append the following table of a few cases, which have been carefully studied, and a few brief histories and fields of representative cases:

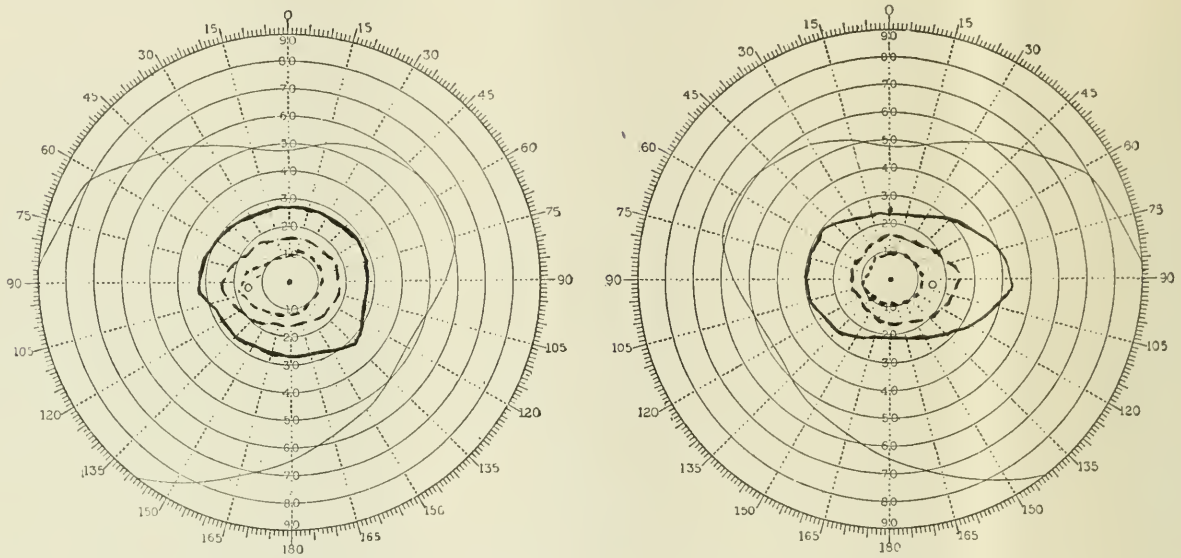

Fig. 1.—Case IV: Age, sixty-eight; blood pressure, 180 mm.; urea, 0.5 per cent.; diagnosis, neuroretinitis.

Case.	Age.	Clinical diagnosis.	Ocular diagnosis	Blood pressure in millimetres.	Urea, per cent.
I	37	Chronic interstitial nephritis	Retinitis	145	2.2
II	57	Chronic interstitial nephritis	Retinitis	180	1.3
III	67	Chronic interstitial nephritis	Neuroretinitis	160	1.5
IV	68	Chronic interstitial nephritis	Neuroretinitis	180	0.5
V	58	Chronic interstitial nephritis	Neuroretinitis	215	0.9
VI	45	Chronic interstitial nephritis	Embolism, central artery	155	2.1
VII	52	Chronic interstitial nephritis	Choked disc, albuminuric retinitis	215	
VIII[1]	68	Chronic interstitial nephritis	Hæmorrhagic retinitis	225	1.2
IX	63	Chronic interstitial nephritis and diabetes	Neuroretinitis	200	1.3
X	66	Chronic interstital nephritis	Neurorctinitis	200	1.3
XI	70	Chronic interstital nephritis	Neuroretinitis	205	1.2
XII[1]	55	Chronic interstital nephritis	Neuroretinitis	190	1.3

[1]Cases VIII and XII are quoted from Dr. Charles A. Oliver's Clinic in Wills Hospital.

Case VI, you will note, has a low blood pressure and fair elimination. The specific gravity, however, of the urine was 1.030 and neither eye showed other disturbance than the results of the embolism. Some of these cases showed marked improvement, as their histories will illustrate.

Case IV. History of "bilious" spells for some time, oppression in head, nausea, and vomiting, blurring of vision. One attack of partial unconsciousness, slight paresis of right side. Specific gravity of urine, 1.010; urea, 0.5 per cent.; albumin and casts present. Blood pressure, 180 mm. Clinical diagnosis, chronic interstitial nephritis. Eye diagnosis, neuroretinitis. Under hot dry pack and internal medication, blood pressure fell to 155 mm. and urea improved. Fields were very much cut. Prognosis not very hopeful.

Case V. Age, fifty-eight. History of head pressure and vertigo, nausea at times and one attack of mental confusion. Urine, specific gravity, 1.010; albumin and casts present; urea, 1.3 per cent. Blood pressure, 215 mm. Recent examination after treatment with vapor bath, etc.: Specific gravity of urine, 1.020; albumin and casts absent; blood pressure, 165 mm.; urea, 1.9 per cent. Clinical diagnosis, chronic interstitial nephritis. Eye diagnosis, neuroretinitis. Prognosis much better than in Case IV.

Case VII. Age, fifty-two. Patient dated trouble to operation under ether one year previous. Complained of headache, nausea, and dimness of vision. When examined; vision in O. D. was 3/200 and in O. S. was 4/200. Urine, specific gravity, 1.018; albumin and casts, present. Urea record was lost or not recorded. Clinical diagnosis, chronic interstitial nephritis. Eye diagnosis, choked discs of 5 diopters; albuminuric retinitis. Death followed in about six weeks. Hot pack daily with internal medication failed to make any appreciable impression on the patient.

Case IX. Age, sixty-three. Ailing for some years. Complained of occipital ache and severe head pains, nausea at times and dimness of vision. Urine, specific gravity, 1.030; albumin and casts present, glucose present. Urea, 1.5 per cent.; blood pressure, 200 mm. Clinical diagnosis, diabetes and chronic interstitial nephritis. Eye diagnosis, neuroretinitis. Patient was much relieved by vapor baths. Blood pressure was lowered to 150 mm. Recent examina-

tion showed urine, specific gravity, 1.020; albumin and casts, negative; urea, 2.3 per cent. Head symptoms much relieved.

Case XI. Age, seventy. History of frequent attacks of "biliousness," vertigo, and dyspnœa. One attack of partial unconsciousness and confusion for forty-eight hours. Blood pressure had been persistently high, 205 mm.; urea elimination, from 1 to 1.8 per cent. Albumin and casts almost constantly present, and an average of thirty-six ounces of urine voided in twenty-four hours. Clinical diagnosis, chronic interstitial nephritis. Eye diagnosis, well marked neuroretinitis. The course of this case was unsatisfactory and the prognosis was bad.

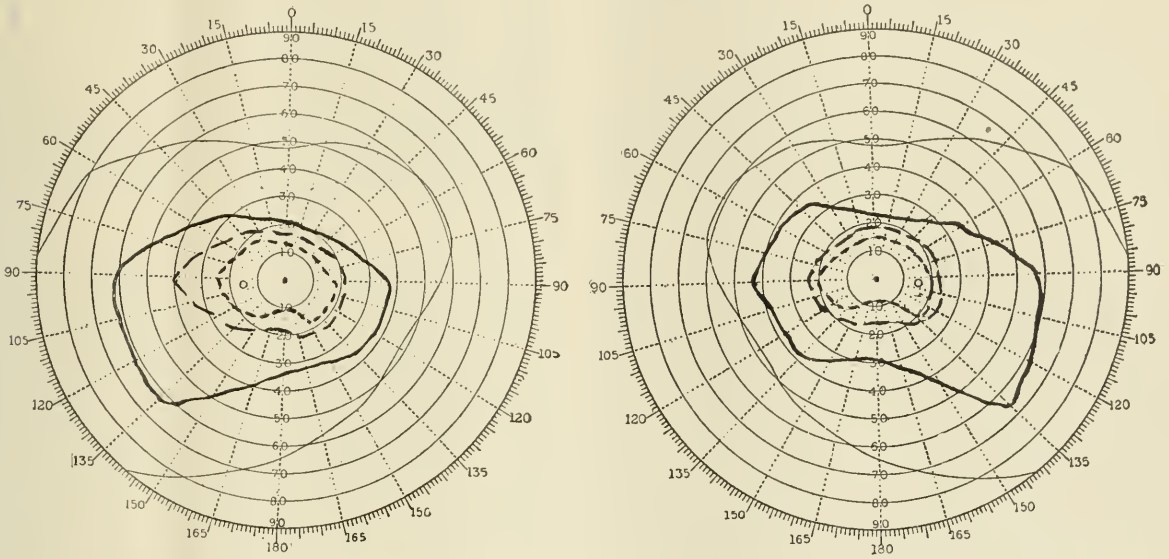

Fig. 2.—Case V: Age, fifty-eight; blood pressure, 205 mm.; urea, 1.3 per cent.; diagnosis, neuroretinitis.

Conclusions.

The conclusions which I have drawn from this preliminary study are:

1. Increased blood pressure is probably the chief cause of eye changes found in chronic interstitial nephritis.

2. Defective elimination may also play a part in their production, but is more closely related to the toxic symptoms of the eye.

3. Eye phenomena are an aid to diagnosis and prognosis in this form of chronic Bright's disease.

4. In order to prevent, if possible, the more serious forms of eye changes, an early diagnosis is necessary.

5. In diseases involving the renal and arterial systems, a joint study by internist and ophthalmologist is productive of the greatest amount of good to the patient and to the physician.

110 South Nineteenth Street.

RESISTANCE OF THE SPIROCHÆTA LYMPHATICA TO ANTIFORMIN.

By Frederick Proescher, M. D.,
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In my last communication concerning the ætiology of that form of malignant lymphomatosis, which was first described by Sternberg (1) and later by Benda (2), who called it malignant granuloma[1], I reported the successful inoculation of this tumor in guinea pigs, monkeys, and rats.

At that time, I was able to detect microorganisms which I named and described as spirochætæ lymphaticæ. These microorganisms were also found in smears, as well as in sections, from lymphatic tissues and also in animals inoculated with the lymphatic tumor mass.

Inoculation produced in guinea pigs and monkeys the typical picture of a generalized lymphomatosis with more or less swelling of the spleen, presenting the characteristic so called porphyr spleen. Rats died in a few days with septichæmia[2] with a slight swelling of the lymphatic system, including the spleen.

The difficulty in detecting this microorganism induced me to try other methods which would make its detection easier. Therefore, I have used antiformin, which is very useful in the isolation of tubercle bacilli, and found that by dissolving the tissue in from ten to fifteen per cent. antiformin solution the microorganism is more easily found. This result also shows that this microorganism is resistant to antiformin. Morphologically and in staining qualities, it differs from the tubercle bacilli. Their identity with the microorganisms which I have observed with ordinary staining methods, eosin-methylene blue, iron hæmatoxylin, silver impregnation, is confirmed.

They were Gram negative, nonresistant to acid, staining with the ordinary basic aniline dyes and appeared as short, straight, comma shaped, or in winding filaments from two to twenty-five mikra long, which stained homogenously. They also appear in small oval form two or three times as thick as a coccus.

[1] In an earlier paper I used the name lymphosarcoma, but on later minute microscopical examination it was found that the tumor resembles the picture of a granuloma or granulosarcoma (Yamasaki-Dietrich); therefore, I use the name malignant granuloma.

[2] If an acute form of this condition caused by the microorganism exists, it is not as yet known. However, I have in mind a former case which showed the clinical picture of acute lymphatic leuchæmia with a general enlargement of the lymphatic glands. I was able to secure a small piece of enlarged lymph gland which showed in smears and in sections impregnated with silver the same microorganisms. Unfortunately, I could not obtain an autopsy on this patient; therefore, I have no material on which to prove the antiformin method.

Whether this is a degenerative product or a sporelike picture can only be decided by further investigations.

With the antiformin method, I was able to detect these organisms in the old specimens of my collection, as well as in two recent cases of malignant granuloma, and also, in the organs and lymphatic glands of inoculated guinea pigs and monkeys. In the spleen of the guinea pig, pictured in the *New York Medical Journal* (3) (Fig. 6), I found them in large numbers.

Reserving a thorough discussion of my own observation for a publication to appear later, I wish to speak briefly of the tumor of the lymphatic glands which Benda described as malignant granuloma and Sternberg regarded this malignant granuloma as a special form of tuberculosis. Benda believed that tuberculosis was an ætiological factor of these tumors, but he did not believe that tuberculosis was the only factor. In nine cases of malignant granuloma, he found two with tuberculous changes, tubercle bacilli being present. In one case, he stated to have found another acid resistant bacillus and believed that syphilis, or attenuated toxines of other infectious diseases, played a part in the production of this tumor.

Aschoff (4) and Hirschfeld (5), who experimented with malignant granuloma on guinea pigs, obtained no results as the animals all lived and tuberculosis did not develop. Aschoff thought that

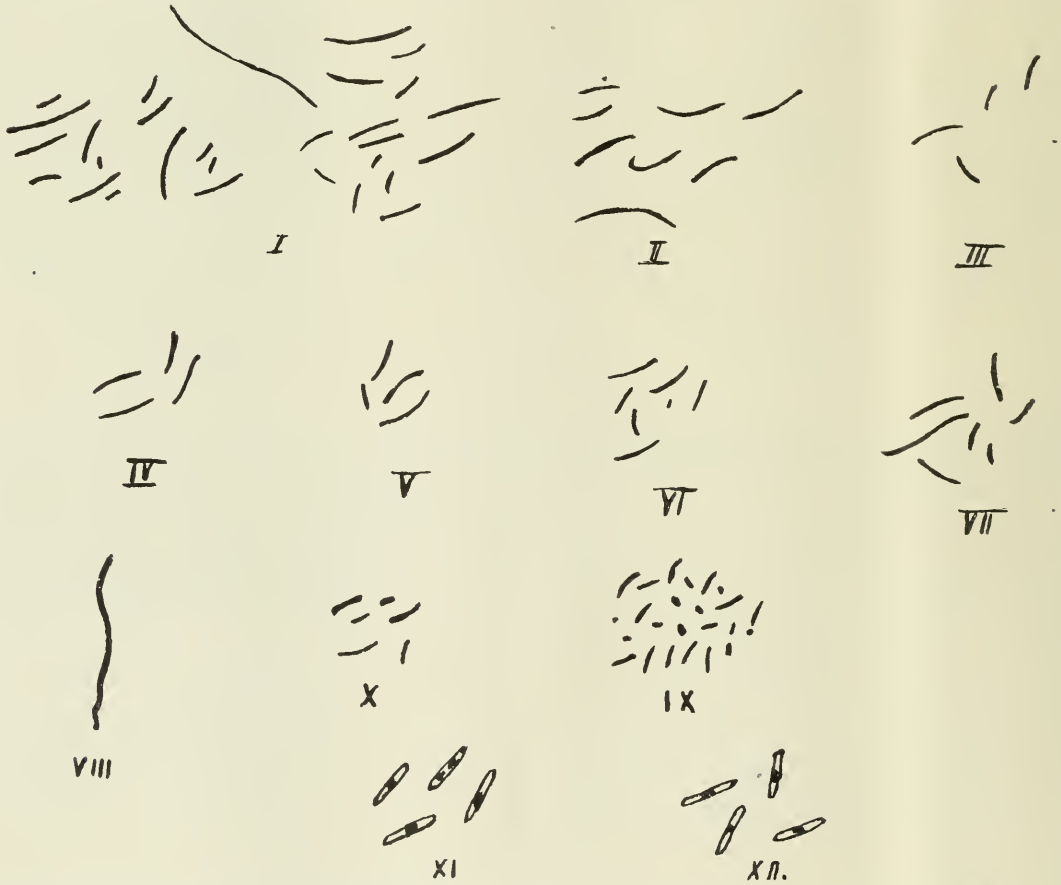

Fig. 1.—Spirochætæ from the spleen of guineapig. Pictured in the *New York Medical Journal*, April 24, 1910. Antiformin method. Fig. 2.—Spirochætæ from monkey II. Lymph gland. Antiformin method. Fig. 3.—Spirochætæ from monkey II. Myeloma. Antiformin method. Fig. 4.—Spirochætæ from monkey I. Lymph gland. Antiformin method. Fig. 5.—Spirochætæ from a malignant granuloma case, the same microorganisms inoculated in monkeys. Fig. 6.—Spirochætæ from malignant granuloma, case G. M.; silver impregnation. Fig. 7.—Spirochætæ from spleen of guineapig. Iron hæmatoxylin. Fig. 8.—Spirochætæ from malignant granuloma, case McM.; antiformin. Fig. 9.—Spirochætæ from malignant granuloma, case Boston. Fig. 10.—Spirochætæ from malignant granuloma, case W.; antiformin. Fig. 11.—Bacterium lymphaticum from chronic lymphatic leuchæmia. Case I. Fig. 12.—Bacterium lymphaticum from chronic lymphatic leuchæmia. Case II. All drawings made with drawing ocular, objective 1/12, oil immersion.

excluded from the group of the pseudoleuchæmic diseases.

Microscopically, it resembles granulation tumor with the effacement of the normal structure of the lymphatic glands. We find a mixture of the lymphocytes, leucocytes, plasma cells, and endothelial cells with more or less eosinophiles, fibroblasts and giant cells resembling bone marrow giant cells. In addition, we find more or less extensive necrosis with a tendency to incomplete fibrous induration, so that this picture resembles one of a malignant tumor (granulosarcoma).

they were dealing, not with the ordinary type of tubercle bacilli, but with an attenuated type and, perhaps, another unknown microorganism. These negative attempts are not conclusive, according to Aschoff, because no results were obtained with typical iritic tuberculosis.

A. Fraenkel and H. Much (6) have lately reported ætiological studies of the lymphomatosis granulomatosa with the findings of the porphyr spleen, who, following the proposal of Chiari, have given the name of Hodgkin's disease. They found in these cases Gram positive bacilli and granules which

could not be distinguished from the gramophile type of the tubercle virus described by Much. Stainable tubercle virus, according to Ziehl, was not found.

The inoculation of guineapigs with granulated bacilli and granules isolated with antiformin, produced typical tuberculosis changes in which were found tubercle bacilli with Ziehl methods and which could be isolated in pure culture.

In nine other cases of this disease which were in the collection in the Pathological Institute in the Eppendorf Hospital and in a tenth case sent there by Sternberg and which showed no pathological anatomical signs of tuberculosis, the same granulated bacilli and granules were found which could not be morphologically distinguished from tubercle bacilli.

Fraenkel and Much believe that the bacillary forms and derivatives found in Hodgkin's disease resemble, in staining characteristics and morphology, the tubercle bacilli, and, when inoculated produce only tuberculosis, those granules which produce the characteristic picture of Hodgkin's disease failing to grow. They refrained from conclusion concerning these bacilli found with antiformin in Hodgkin's disease and only expressed the possibility of the close relationship to the tubercle bacilli, while Aschoff and Hirschfeld with their inoculation experiments had only negative results, and Fraenkel and Much, with their material, found typical pure tubercle bacilli.

In my experiments, I found granulomatous changes combined with tuberculosis, or purely granulomatous changes, or septichæmia. Without doubt, the same histological growth was dealt with by the other authors as well as by myself. Further inoculation with granulomata must show whether similar ætiology—which I believe is the case—or whether attenuated types of tubercle bacilli or syphilis is the factor.

I regard the tuberculous alterations as an accidentally secondary infection and the granulated bacilli which Fraenkel and Much found as attenuated tuberculous virus. In regard to syphilis, in the cases I personally examined, no trace of syphilis was found. In one case of malignant granuloma, the syphilitic test was positive. Caan (7) has recently published four cases of lymphomatosis granulomatosa in which the Wassermann test was positive. No conclusion concerning the syphilitic ætiology of the disease can be drawn as the Wassermann test is not specific reaction for syphilis, as it is found in scarlet fever, leprosy, and tuberculosis.

Fraenkel and Much called attention to bacilli found by them by means of antiformin in lymphatic leuchæmia. In seven cases of this disease, organisms were found in the spleen and lymphatic glands which stained with Gram and were thicker than tubercle bacilli. Many contained thick granules and part of the bacillus was irregularly stained, part with Gram and the rest stained by the counterstain.

Inoculation of six guineapigs with an emulsion of leuchæmic gland, showed in one which died six months after inoculation, in smears from enlarged mesenteric glands, nothing with the Ziehl method. and with the Gram method large bacilli three to four times as thick as tubercle bacilli. The result of Fraenkel and Much I can verify. In two cases of our collection of chronic lymphatic leuchæmia, I found the bacilli in spleen and lymphatic glands. I found the granules which occurred three or four times in the bacilli body were stained by Gram. The protoplasm faintly stained with counterstain. The bacilli were also stained by Giemsa method, the granula staining blue, the protoplasm pale pink. In conclusion, I wish to describe my method of isolating the microorganisms with antiformin.

The fresh or formaldehyde fixed tissue when frozen is cut with the microtome in sections, from 25 to 30 micra thick, and dissolved in a ten per cent. or fifteen per cent. antiformin solution. A stronger solution is not advisable, as the high specific gravity of the solution makes sedimentation very difficult. After dissolving (particles of undissolved tissue can be removed by filtering through sterilized gauze) the solution is placed in sterile centrifuge tubes and with a high speed centrifuge of from 2,500 to 3,000 revolutions, centrifuged from fifteen to thirty minutes. The superjacent fluid is drawn off and the scanty sediment is washed once or twice with distilled water. Centrifuge again for from fifteen to thirty minutes. Then draw off the washing water except a few drops and place sediment on perfectly clean cover glasses. (Cover glasses are cleaned with bichromate and sulphuric acid.) By using perfectly clean cover glasses, the sediment adheres and no albumin is necessary to fix it. For staining the above described microorganism, I use my modified carbol-fuchsin, gentian violet, iodine method (8) which stains at the same time the tubercle bacilli, and counterstaining with toluidin blue.

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VINCENT'S ANGINA.*

By A. Morgan MacWhinnie, M. D.,
Seattle, Wash.

Without a doubt, this tonsillar and pharyngeal affection is treated more frequently than any other condition of this region without a correct diagnosis having been made. You probably can recall many cases of membranous inflammation occurring on the tonsil which have recovered only after you have tried one remedy, following it by a series of others, and are at a loss to know which remedy gave the result.

*Address delivered at the Skagit County Medical Society, March 25, 1910.

Clinically, we must differentiate this lesion from the diphtheria and mucous patch of syphilis, the importance of which is self evident. The ætiological factor is that of Vincent's spirillum and the fusiform bacillus. Attention was first attracted to this condition by Plaut in 1894, who described a spirillum and a spindle shaped bacillus in cases of membranous amygdalitis. This was followed by Vincent in 1896, who described similar organisms in cases of hospital gangrene. The cases that have been recorded since this time are extremely rare.

The bacillus varies from ten to twelve micra in length, occasionally as short as six micra, and is usually associated with a fine spirillum, but not constantly. A good description of the shape is that of a canoe with often traversed markings that somewhat resemble the seats of the canoe. The spirillum which accompanies this bacillus is extremely thin, long, and on a hanging drop slide is seen as motile. It is a saprophyte of the buccal cavity, but becomes pathogenic in the presence of other organisms.

While any of the aniline dyes may be used, the intensity is greatest when gentian violet or aqueous fuchsine is employed. Careful fixation of the smear by gentle heat, and during the staining process as well, aids in bringing out the bacillus and spirillum. The occurrence of the bacillus may be irregular, often occurring as tetrads, vacuoles, and other degenerative forms.

Personally, I can recall three cases that were diagnosticated as diphtheria and four as syphilis clinically, which microscopically revealed a characteristic fusiform bacillus and spirillum.

True it is that other organisms are found, the streptococcus often accompanying this saprophyte, but the exudate is as a rule characteristic, usually grayish or whitish, and often with a pronounced adenitis. The incipiency with which it occurs is often misleading, a redness of the tonsils and fauces often preceding the membrane formation, while in other cases it is discovered only on examination, the patient complaining of but slight sore throat. In other cases the membrane will have separated, and an ulceration of great depth is seen. The peculiarity of these cases is that the temperature is as a rule not over 99.5° or 100° F., and the constitutional symptoms are at variance with the amount of lesion that you see. Infection only takes place when the mucous membrane is abraded and it often becomes grafted upon a preceding attack of amygdalitis.

The depression of the patient is described by some reporters as being very small. In the cases that I have seen lately the depression has been very marked, so much so that the patients were completely prostrated out of proportion to the clinical manifestations of the throat. The depression is not present in a marked degree except in cases where the membrane covers a large area of the tonsil or pharynx and is of the heavier type. Cases in which the membrane is thin rarely give very much depression; as a rule the membrane is decidedly adherent. When removed a raw, bleeding, and tender surface is the result. The cause of such prostration as is often seen has not so far been ascertained.

In all of my cases a marked anæmia was present. What part this may play as an ætiological factor I am unable to say. The cases yielded so readily to properly applied treatment that they were lost from view before I could make further investigations along this line. The rapidity with which healing of the ulceration takes place following the disappearance of the membrane is striking, as a rule leaving no manifestation of the previous condition. This applies to superficial as well as to the deeper ulcerations. The adenitis which often accompanies this process disappears readily, usually in six to ten days after healing has taken place.

Some cases are recorded where the membrane extends from the posterior pharyngeal wall to the pyriform sinus, but I have never observed such cases, either in consultation or my own practice.

A curious fact is the rapid recurrence that takes place when the membrane is removed, so similar to the membrane of diphtheria. A rapid disappearance of this membrane usually takes place upon proper medicinal application, while in other cases it recurs, due to the fact that caustics, as silver nitrate, guiacol, and other substances have been used, which destroy the surface covering of the tonsil and allow this saprophyte to become pathogenic.

Recently I have had a case of tonsils which had been amputated three times, leaving buried stumps covered with this membrane. Removing the stump in the capsule, complete disappearance of this membrane resulted. Two other cases of similar character and results occurred during the last three months, amputation having taken place but twice.

We must remember that it is a saprophyte of the buccal cavity, but loses its saprophytic character in the presence of other organisms. When the lesion occurs in children the intensity of the clinical symptoms is increased, and often fatal.

I believe that the fact that many cases are overlooked or misdiagnosticated is that the symptoms complained of, painful deglutition, etc., are not always present. I shall not describe in detail all the cases I have seen, but shall give the history of two, each different from the other in many respects.

It is evident that the diagnosis in all cases should be made with microscopic slides, consisting of smears from the membrane which requires but a few minutes. Many cases are probably not diagnosticated due to the fact that immediately the membrane becomes evident a culture tube is brought into service, and the case is subjected to the routine of a diphtheria case.

Case I. Mr. R. A. N., age forty-five. Four months ago he had a severe attack of amygdalitis, and a short time after both tonsils were covered with a grayish membrane which he readily saw with a looking glass. Other than difficult deglutition and some depression he felt well. Upon consulting a specialist the tonsils were amputated three times at intervals of a month, the membrane recurring. When I examined the case I found tonsil stumps on which there was a membranous formation. Temperature 99.2° F., pulse, 74. Microscopically by means of smears Vincent's spirillum and the fusiform bacillus were demonstrated. The stumps were enucleated, the capsule completely taken out by finger, under ten per cent. cocaine, used hypodermatically. Fossæ and surrounding area treated for three days by tincture of iodine, full strength. Time elapsed since enucleation, four months. From the preceding history and elapsed time I believe that I have effected a cure.

Case II. Mrs. J. H., age twenty-eight. Sore throat on the right side for four days, with difficult deglutition. In this case the temperature ranged from 100° to 103° F., but with a pulse of only 86. This case had been treated for a period of one week as amygdalitis. Upon examination

the right tonsil was found to be swollen, and a distinct ulceration seen, two thirds of which was covered with a grayish or slate colored exudate. Incisions had been made above by the family physician for possible peritonsillar abscess, this wound immediately becoming infected, resulting in the formation of a membrane, similar to the one described. The amount of depression in this case was tremendous, the patient being practically prostrated, but at the end of four days' treatment she was able to eat, and on the sixth day went out.

In quoting these two different types of cases the fact is emphasized that there is a wide variance in the effect of this infection, and a membrane formation does not take place unless there is a preexisting destruction of tonsillar epithelium.

411-414 White Building.

A CASE OF VITILIGO WITH A HISTORY OF HEREDITY.

By Edward H. Marsh, M. D.,
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The patient was a man, thirty-one years of age, a native of New York State, single, and a machinist by occupation. He consulted the writer for syphilis of which he gave the following history: Urethral chancre, four and one half years ago, followed by lesions on skin and mucous membranes. He had been treated for three and one half years with mixed treatment. Physical examination revealed nothing syphilitic and the Wassermann reaction, six months after cessation of treatment, was negative.

The examination revealed several achromatic areæ, irregular patches on the backs of both hands, fingers, and wrists; one half the penis and the entire scrotum were affected; over the trochanter of the left thigh a large patch about three inches in diameter and several smaller patches irregularly distributed over the trunk.

The patient had first noticed the disease fifteen years ago upon the backs of his hands; these patches enlarged very slowly. After he acquired syphilis, the lesions on his genitals appeared and were of very rapid growth until one year ago.

The interesting feature of this case lies in the family history. The father of the patient had the same disease starting on the backs of his hands and wrists and later appearing upon the neck. A sister of the father's mother also had vitiligo, the patches occurring upon both hands; whether it was more extensive in her case is not known.

448 Ninth Street.

DIOXYDIAMIDOARSENOBENZOL OR "606"; EHRLICH'S NEWEST REMEDY FOR SYPHILIS.*

By Samuel J. Meltzer, M. D.,
New York.

The advance of medical science in our days is forcibly illustrated by the amazing discoveries in the domain of syphilis which have followed one another in rapid succession within the last five years. First came the message that the long sought cause of the disease was finally discovered by Schaudin; not only could the protozoon be made visible in the syphilitic lesions by the newer, refined methods of staining, but with the aid of the newly invented dark field microscope also the very motions of the unstained, living, corkscrewlike spirillum can now be easily seen and studied. Soon after came the further news that Metchnikoff and Roux had succeeded in transmitting syphilis to monkeys. To-day investigators succeed easily in the transmission of the disease also to rabbits, and an inoculation into the testicle of this animal produces a primary effect which contains myriads of spirochætes. That this progress opened up new fields for the study of the disease and its treatment needs no further elucidation. Then loomed up the discovery of the Wassermann reaction, which became of immense service in the recognition of the remains of the disease long after the disappearance of its usual manifestations. Now comes the climax—the great message that Ehrlich has perfected a remedy which by one injection frees the body from the spirochætes in less than twenty-four hours and cures primary, secondary, and tertiary lesions in two weeks or even in less time. Thousands of cases of syphilis have now been treated with this new remedy by many leading dermatologists of all shades of temperament, and all use one term to designate the effect: it is startling, stunning (*verblüffend*). All seem to agree that one injection of "606" accomplishes more than a radical mercurial treatment for one year, that just such cases as do not respond at all to mercurial and other treatments respond promptly to one injection of Ehrlich's new preparation. The favorable effect of the remedy seems to become noticeable already in a few hours after its injection. "I saw on Saturday a patient with a dirty, coated *Erosivschanker* and about twenty rose spots on the body. I gave him an injection (of 606) at 3:30 p. m. At 7:30 p. m. nearly all the roseola had disappeared and on Sunday morning the chancre was clean and nearly without any induration" (Wechselmann).

According to all reports we are confronted here with a therapeutic agent which medicine has never seen anything like. It is profoundly gratifying to know that this wonderful remedy of Ehrlich's is the culmination of a long series of experiments and well laid out plans of that unique mind. In fact, any one who is familiar with Ehrlich's various brilliant contributions to medical science could not fail to see the link which connects them all and connects his latest achievement even with his very first contribution, in which he demonstrated the specific affinities of the various leucocytic granules to various types of stains. But we shall deal only with his attempts to affect protozoon diseases by some chemical agents. This began about twenty years ago, when he studied the affinity of methylene blue for the malarial plasmodia. In the following years his attention was engrossed in the development of serum therapeutics and the erection of that magnificent immunity structure which has given shelter to hundreds of investigators. Some six or seven years ago, when the treatment of sleeping sickness became a practical problem and the trypanosomes presented a type of protozoa which were by far much easier to handle than the malarial protozoon, Ehrlich returned to experimental studies of the therapeutics of protozoon diseases. He again turned his attention at first to the action of stains; this led up to his discovery of "trypan red" as a specific for trypanosomes. Later he turned his attention to arsenical preparations, especially to atoxyl. He soon discovered the fact that the correct constitution admits of a variety of substitutions, some of which reduced the toxicity of the substance for the animal without abolishing its effectiveness upon the

*Written for the *New York Medical Journal* at the suggestion of the Editor.

invading protozoa. He then first prepared a substance known as arsacetin, which seemed indeed to cure the infected animals. But in testing it upon human beings it was found unsatisfactory. Next he developed a substance which was termed arsenophenylglycin. This was found to be indeed very useful also in the treatment of human disease, but it was still not an ideal preparation, as it produced some irritation of the kidneys, etc. If I am not mistaken this preparation bore the number 408. In experimenting still further Ehrlich obtained his present wonderful product, No. 606. In November of last year Ehrlich and Hata completed their experiments on animals, which comprised trypanosomiasis, fowl spirilliasis, and syphilis. Ehrlich sent some of this substance to Iversen in St. Petersburg, where relapsing fever is a frequent disease. On account of the presence of Obermayer's spirillum in the blood this disease was deemed to be very appropriate for a study of the effect of the new substance. The result was most gratifying. After one injection, all spirilla disappeared from the blood, and under a critical profuse perspiration the patients recovered. Meanwhile Professor Alt began in the large insane asylum under his direction a cautious study of the effect of this new preparation in such cases of locomotor ataxia, paralysis, and epilepsy, as were known to be of syphilitic origin; the result was again gratifying. Now began the study of fresh cases of syphilis by a number of well chosen dermatologists—with the above mentioned brilliant result.

Rarely, if ever, has there been such unanimity in medical statements as in those enthusiastic reports over the effects of the Ehrlich-Hata preparation. The spirochætes disappeared, primary affections lost their induration, ulcers cleaned up and were rapidly covered by epidermis, headache, periosteal pains, paralyses, etc., disappeared. The patients felt well and gained in weight—all this after a single injection and in a comparatively short time.

The question of whether the cure will prove permanent need not be discussed, as only the future can answer it. A large number of patients have remained cured for many months. In only a very small fraction of the cases have there been relapses; in these cases apparently the injected dose was too small.

Over the fate of the Wassermann reaction the reports differ widely; some have seen it becoming negative in one hundred per cent. of the cases, others only in forty per cent. and less. In all the cases the change in the reaction occurred much later than the disappearance of the syphilitic manifestations.

There was a close watch for any untoward effects of the substance on the kidneys, eyes, etc., but no complications were observed. The report of two writers (who observed altogether only fourteen cases) that in three of these there was paralysis of the bladder, reduction of reflexes, etc., was apparently due to their faulty technique and to the use of too much or impure methyl alcohol; no other observers, who studied hundreds of cases, have ever observed such complications.

One unpleasant complication, with which many had to contend, is the causation of pain which sets in late and lasts for many days. This, however, seemed to have occurred only when the injection was given intramuscularly in the gluteal region. This applies also to the temporary slight elevation of the temperature. Intravenous injections cause no pain.

The facts regarding the best methods of dissolving the substance, the mode of injection, the dose to be used, and other details are carefully collected and studied and need not be mentioned here. The preparation is, so far, distributed only among a selected class of observers, with hospital facilities, for a careful study of the details, which will be carefully established before the new preparation is handed over to the general practitioner.

What does this message mean? No matter what qualifications the present statements may have to undergo, this great fact is well assured—a single injection of a synthetically made chemical compound is capable of completely "sterilizing" the diseased animal body in a very short time. There is only one other drug the action of which is perhaps comparable with the action of Ehrlich's "606," and that is quinine. But the action of quinine was only accidentally discovered, while Ehrlich's preparation was synthetically made on the basis of well formulated ideas. Furthermore, the preparation seems to affect relapsing fever in the same surprising manner as it does syphilis; it seems to be a specific for spirilla. On what clinical basis could any one have ever dreamed that two such different diseases would have a common cure?

And one more word of the outlook. If the reports continue to hold what they promise, syphilis could be eradicated from civilized humanity in two or three decades. What a hope, what a dream!

13 West One Hundred and Twenty-first Street.

Our Readers' Discussions.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

C.—How do you treat œdema of the lungs? (Closed July 15, 1910.)

CI.—How do you treat chronic nasal catarrh? (Closed August 15, 1910.)

CII.—How do you treat other electric shocks than that of lightning? (Answers due not later than September 15, 1910.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED) *that the answers be short; if practicable no one answer to contain more than six hundred words.*

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the Journal. Our readers are asked to suggest topics for discussion.

The prize of $25 for the best essay submitted in answer to question XCIX was awarded to Dr. Louis J. Spivak, of Philadelphia, whose article appeared on page 220.

PRIZE QUESTION XCIX.

THE TREATMENT OF GONORRHŒA IN THE MALE.

(*Concluded from page 324.*)

Dr. Curtis R. Day, of Oklahoma City, Oklahoma, writes:

The most difficult problem confronting one in outlining a treatment for gonorrhœa in the male lies in the fact that there is such a variety of conditions or locations of infection in the different cases when the patients present themselves for treatment.

In planning my treatment I divide the cases into three classes, each of which I will consider separately.

1, Anterior urethral; 2, posterior urethral; and, 3, periurethral.

1. In the treatment of the first type, we must realize that we are dealing with a purely local infection and adopt remedial measures, with the same care as in any other form of local or superficial infection; and most authors agree that moist antiseptic dressings are best. Following this principle, I have my patients come to the office twice in every twenty-four hours and I treat them myself as follows: After having the patient urinate I at once inject, with an ordinary "P" syringe, the urethra with a solution of one of the organic silver compounds and either myself or assistant retains the same in the urethra, by pressure on the meatus, for from five to ten minutes. During this time the patient is kept lying flat upon his back. The solution having been allowed to escape, the glans penis is then covered with a thin layer of cotton or gauze saturated with the same solution, which is to remain in place until the next treatment, except in the event of urination, after which the patient is instructed to replace the same.

This treatment is continued for from five to ten days or until the discharge ceases, after which the patient is instructed to wash out the urethra, with the same solution, after urinating, for about two weeks; and as a rule no farther trouble results.

2. Should the posterior urethra be involved, the treatment I use is as follows: After having the patient urinate the urethral canal is irrigated, in the following manner. The ordinary female glass catheter, of small caliber, is used for a tip to the irrigator. The irrigator is placed about one foot above the patient so that very slight pressure can be obtained. The flow is begun as soon as the eye of the catheter passes into the meatus and slowly introduced to its full length. In this way the return flow passes outside the catheter and washes the urethra. About one quart of a solution of one of the organic silver compounds is used for each irrigation. Immediately after irrigation the injections are given in exactly the same manner as in the cases of anterior infection. These treatments are given once a day until the discharge ceases, after which the patients are instructed to treat themselves as are the cases of anterior infection.

3. Periurethral, or infections of glands and vesicles, which are connected with the urethra, constitute a class peculiar to itself. Owing to the fact that infection of either Cowper's gland, the prostate, vesiculæ seminales, vas deferens, or even the bladder, in discharging the pus through the urethral canal, do not as a rule reinfect the urethra, enables us to treat this class of cases very different from either of the other classes. Here we are very likely to have cavities of infection, which must either be drained or a systemic infection follows. My method of draining these cases is by the use of the galvanic electrical current, the negative electrode within the urethra at the site of the duct openings of the infected glands, and the positive electrode at some remote area. I then use from five to ten milliampères current for from five to ten minutes. These treatments are given every other day, and when the inflammation begins to subside the time between treatments is lengthened. I also use Neisser's bacterin in doses beginning with 50,000,000 gradually increasing doses, and lengthening the time between treatments until all evidences of infection are absent.

Microscopical examinations tell me when my patients are well. Specimens for such examinations must be collected from all areas of former infections.

Dr. C. E. Bortner, of Hanover, Pa., writes:

In acute anterior urethritis, it is necessary to have prompt treatment. I urge absolute rest in bed, liquid or light diet, and those local and internal measures which would be indicated.

Cleanliness is a most important matter. Particular attention must be paid to the care of the hands, and that after handling the penis the hands must be thoroughly cleansed, paying especial attention to the nails.

The dressing should be light and at the same time protect the garments. For this I use a simple piece of aseptic gauze about four inches square, a hole is made in the centre large enough to allow the glans penis to enter. The ends of the dressing are fastened together to catch the discharge. This dressing should be changed after each urination. A snugly fitting suspensory should be worn throughout entire attack. Putting the penis in hot water (as hot as can be endured) three or four times a day lessens congestion and inflammation. Sexual intercourse must be strictly prohibited. It is advisable to have a daily bowel movement. All heavy articles of food should be interdicted, as they stimulate and excite. Milk, eggs, broths, bread and butter, and similar articles of food should be taken. Meats, shell fish, foods highly seasoned with usual condiments, asparagus, cheese, and strawberries must be forbidden as well as alcoholic and malt beverages. The use of tobacco is permissible in cases where persons are heavy smokers, but only moderately.

In treating you must know the condition present; whether anterior or posterior; superficial or deep. The abortive method of treatment is unquestionably efficacious in many instances, but patients should present themselves within twenty-four hours after discharge is noticed. First, let the patient urinate, then irrigate the urethra twice daily with a solution of one of the organic silver compounds, after this the patient lies on a table and receives an injection of two drachms of a stronger solution, which is held in the urethra for five minutes. The strength of the injection is gradually increased. This treatment lasts seven days. This method is sometimes unsatisfactory.

Methodical treatment. The majority of patients do not seek treatment until the disease has reached a stage of inflammation and the discharge is profuse, thick, and creamy. I then use irrigations. Injections are not as good, as they do not distend every portion of urethra. I do not let my patients irrigate themselves, as they injure themselves. I have the patient stand up for this treatment, and when suffering from acute anterior gonorrhœa he should receive twice a day irrigations, allowing nine hours to intervene between each treatment. I am not in favor of intravesical irrigation in acute gon-

orrhœa, but irrigate the diseased locality. The earlier advocates of this irrigation treatment employed potassium permanganate, from 1 in 5,000 to 1 in 2,000. This solution when used with a quart of water, at a temperature of 110° F., produces œdema of the urethra, thus making it an unsuitable soil for gonococci development. I use potassium permanganate in stage of decline. Occasionally, when microscopical examination shows pus cells and a few gonococci, a solution of bichloride of mercury, 1 in 20,000, is added to the permanganate solution; this reduces pus cells.

Even in the declining stage I have rarely found it necessary to relinquish irrigations in favor of astringent injections. These should be given only in the stage of decline among which used are:

I.

℞ Zinc sulphate, ...āā gr. v;
Powdered alum, ...
Carbolic acid, ...gr. iv;
Water, ...q. s. ad ℥iv.
M.

II.

℞ Zinc sulphate, ...gr. xv;
Lead acetate, ...gr. xxx;
Water, ...q. s. ad ℥is.
M.

It sometimes becomes necessary to use urethral dilatation, and I use Kollman's anterior dilator when the follicles and crypts harbor gonococci. Following the dilatations I use irrigations with a solution of one of the organic silver compounds. I dilate every five days. At each sitting I dilate farther than at the previous sittings. It may be necessary to irrigate daily between these dilatations, especially when much discharge follows, with silver preparations, for gonococci, potassium permanganate and bichloride of mercury for other organisms. Where dilatations are not tolerated I use an aqueous solution of four per cent. copper sulphate suspended in glycerin. This acts as an antiseptic as well as astringent.

Internally I prescribe salol, cubeb, copaiba, oil of sandal wood, etc.

In acute posterior urethritis, complications are many, and I think it best to refrain from any local treatment in early stage. For pain I use a rectal suppository of opium and belladonna, inserted twice a day in the rectum. I enforce rest, sitz baths, liquid diet.

Occasionally local relief may be obtained through irrigating the posterior urethra with a decinormal salt solution by means of a hand syringe and soft rubber catheter. When urine shows shreds and is turbid in the stage of decline I use silver nitrate instillations, from one half to five grains to the ounce, every three days for several weeks. Gonorrhœal complications should be treated as they appear.

Therapeutical Notes.

Intraneural Injections for Neuralgia.—In a review of an article by O. Wiener, in the *Berliner klinische Wochenschrift* for March 7, 1910, published in the *British Medical Journal* for July 9th, the history of treating neuralgia by means of injections is briefly touched upon. About the middle of the last century Rynd advised the injection of morphine and creosote in the neighborhood of the painful nerve. Wood carried out morphine injections some ten years later. Later the morphine was replaced by heroin and dionine. These injections had the object of diminishing the irritability of the nerve. Another set of injections was introduced for the purpose of stimulating the nerve, and thus producing a definite inflammatory reaction. Concentrated solutions of sodium chloride and silver nitrate were used for this purpose. Ether, chloroform, and alcohol were also employed in these injections. The action of alcohol on the nerve in producing Waller's degeneration was minutely studied, and some authors asserted they obtained good results with it. Osmic acid and methylene blue have also found supporters. Wiener injects the fluids directly into the nerve trunk, acting upon the suggestion of Lange, who used physiological saline solution in large quantities to which betaeucaine had been added in the proportion of 1 in 1,000. Wiener has found that the eucaine can be dispensed with and he employs physiological saline solution cooled down before use. He carries out the injections as follows: In sciatica, he flexes the leg and thigh slightly, and then seeks for a painful point between the trochanter and tuber ischii. If no such point can be found in this situation, he seeks further afield. Having found the painful spot, he anæsthetizes the skin and inserts the injection needle provided with a mandarin or trocar at this situation. The needle must be about 8 cm. in length. The needle is aimed at the nerve, and he is not satisfied that the nerve is reached until the patient feels a sudden pain radiating right down to the toes. The author states that this "control" pain is absolutely necessary for success, and that it is quite useless carrying out the injection unless the nerve is actually pierced. As soon as the nerve has been reached, the needles must be fixed in position and the style or mandarin withdrawn. The syringe is then applied to the needle, and 100 c.c. of saline fluid injected under constant pressure. The injection is painful, but as soon as the needle is withdrawn all pain immediately disappears, and the patient finds himself freed from all traces of his sciatica. The author proceeds to deal with a febrile reaction which follows the injection of isotonic salt solution. After discussing the conditions under which the fever is met with, and dealing with the literature on the subject, he shows that the reaction is due to the sodium ions, and that it can be partially prevented by neutralizing the effect of these ions by the addition of ions which paralyze instead of stimulating, such as calcium. He used sodium chloride, 6 grammes, calcium chloride, 0.75 grammes, in 1,000 grammes of water, and did not experience any marked fever reaction. In all he has injected seventy-five cases of sciatica, but only sixty of these received the fluid into the nerve. Of these patients, one was not improved by the injections, eight were considerably improved but not cured, and fifty-one were cured. He states that no ill effect either locally or generally was experienced in any of the cases. He further obtained good results in the lightning pains of tabes, in facial neuralgia, and in some cases of cephalalgia.

REMEDIES OF RECENT INTRODUCTION.

(*Continued from page 326.*)

Neutralon is an aluminum silicate intended for use in the treatment of gastric complaints. It combines readily with hydrochloric acid to form silicic acid and aluminum chloride. It has no action on the intestine. It is administered in doses of one drachm, three times a day.

Nicomors is a name applied to tablets containing magnesium peroxide and a little tannic acid, which are intended to be allowed to dissolve in the mouth during smoking. The theory is that the free oxygen liberated will combine with the nicotine to form the less harmful compound oxynicotine, while any nicotine that may find its way into the stomach will be neutralized in the small intestine by the tannin.

Noridal Suppositories, used for the relief of bleeding piles, are said to have the following composition: Calcium chloride, grain ¾ (0.05 gramme); calcium iodide, grain 1/7 (0.01 gramme); paranephrine (adrenalin), grain 1/640 (0.0001 gramme); balsam of Peru, grains 1½ (0.1 gramme).

Novocol is the name given to sodium guaiacol monophosphate. It forms a white crystalline powder, soluble in water. It contains 50 per cent. of guaiacol, which is liberated in contact with an alkali. It is prescribed in tuberculosis, chronic bronchitis, and catarrhal affections of the respiratory organs, in doses of from 4 to 8 grains, three times daily, for adults, and from 1½ to 2 grains for children.

Novoiodin is stated to be a mixture of equal parts of talcum and hexamethylenetetramine diiodide. It is recommended to be used in suspension in olive oil, glycerin, collodion, or other vehicles. It is asserted to be a powerful disinfectant, which on contact with wound secretions liberates iodine and formaldehyde.

Odylis, a terpine resorcinate, is a viscid yellowish oil with a powerful but pleasant odor, obtained by warming in a porcelain capsule 110 grammes of resorcin and the molecular amount of terpine. It is credited with an antiseptic and healing action; is soluble in alcohol, ether, and in oils. It is administered in gelatin capsules in affections of the bladder.

Orthonal is the name given to an anæsthetic compound intended for dental use. It consists of cocaine hydrochloride, 0.5 gramme; alypin, 0.75 gramme; adrenalin solution, 1 in 1,000, 6.0 grammes; physiological salt solution, enough to make 100.0 grammes. It is put up in ampoules holding 1 c.c.

Ovaradentriferrin represents tablets containing 0.3 gramme of ovaraden and 0.10 gramme of triferrin. It is recommended for use in the treatment of female complaints.

Oxygar, a preparation of hydrogen dioxide and agar-agar, is recommended for internal administration in gastric and intestinal affections. When freshly prepared it contains 10 per cent. of hydrogen dioxide. The usual dose is 15 grains, three times a day before meals.

Parabismuth is a combination of ostauxin and bismuth. It forms an almost white powder, insoluble in water and contains 50 per cent. of bismuth.

Pergenol, solid hydrogen peroxide, is a molecular mixture of sodium perborate and sodium bitartrate. On coming into contact with water it splits up into hydrogen dioxide, boric acid, and neutral sodium tartrate. The boric acid combines with the sodium tartrate to form borotartrate. It occurs as a crystalline powder.

Perogen is a preparation of sodium perborate, used for producing oxygen baths. The material for a perogen bath consists of the perborate and a "catalyser," each wrapped separately, the latter causing the perborate to part with its oxygen in contact with water.

Peroxides, New.—The following are the protected names of the respective peroxides manufactured by a firm of German chemists: Borodat, $NaBo_2$; Calcodat, CaO_2; Magnodat, MgO_2; Permagnodat, $MgOBo_3Bo_2$; Perzinkodat, $ZnBo_3Bo_2$; Zinkodat, ZnO_2.

Peroxydol is the protected name for medicinal sodium perborate.

Phenandyne is a nonirritating and nonescharotic preparation of phenol which is intended for use in the same way as lysol and similar compounds, though intended more particularly for use in dental work.

Phenostal is the name adopted for carbolic acid tablets containing diphenyloxalic ester, which with water forms oxalic acid and phenol.

Phosiron, the neutral iron salt of a complex phosphotartaric acid, contains nineteen per cent. of iron and 6.5 per cent. of phosphorus. It is insoluble in water and diluted acids, but is soluble in alkalies.

Phymochrom is an arsenic compound of the thymus gland, used for the internal treatment of skin affections.

Pituitrin, reported last year as a dried extract, has been recently put on the market in the form of a sterilized solution of the pituitary glands; used in exophthalmic goitre and giantism, in doses of ten to thirty minims, either by the mouth or hypodermically.

Projodin is an iodocasein obtained by the action of iodine on casein in solution. It contains about eight per cent. of iodine and 85.62 per cent. of albumin. It forms a yellowish white powder, insoluble in water and diluted acids, soluble in alkalies and in a solution of sodium and potassium phosphate. It is almost tasteless and odorless and is given in tablets of fifteen grains, as many as thirty being taken daily.

Propal is dipropylbarbituric acid.

Propyrine is the trade name for sodium thymobenzoate.

Quinine acetylsalicylate (basic), is a white, bitter tasting salt, soluble 3 in 1,000 parts of water, and in alcohol 2.5 in 100. It is used as an antipyretic in peritonitis and pleurisy in doses of 6 grains, *pro re nata.*

Radiogenol, put up in ampoules, is an emulsion of insoluble radioactive minerals intended for injection into tumors, etc.

Renalina is an Italian appellation for adrenalin.

(*To be continued.*)

NEW YORK MEDICAL JOURNAL
INCORPORATING THE
Philadelphia Medical Journal
and The Medical News.

A Weekly Review of Medicine.

Edited by
FRANK P. FOSTER, M. D.

Address all business communications to
A. R. ELLIOTT PUBLISHING COMPANY,
Publishers.
66 West Broadway, New York.
Cable Address: Medjour, New York.

Subscription Price:
Under Domestic Postage Rates, $5; under Foreign Postage Rate, $7; single copies, fifteen cents.

Remittances should be made by New York Exchange or post office or express money order, payable to the A. R. Elliott Publishing Co., or by registered mail, as the publishers are not responsible for money sent by unregistered mail.

Entered at the Post Office at New York and admitted for transportation through the mail as second-class matter.

NEW YORK, SATURDAY, AUGUST 20, 1910.

ARSENIC IN THE TREATMENT OF SYPHILIS.

Ehrlich and Hata's experiments with the organic compound of arsenic which bears the systematic name of dioxydiamidoarsenobenzol have aroused general interest. For reasons of brevity they have named this chemical compound "No. 606," and thus far have confined its use to the treatment of hospital patients, declining to give out any supplies for use in private practice. Much of the work with the use of these complex organic compounds of arsenic, as reported during the past year, has been confined to animal experimentation, and remarkable results are reported from different institutions where experimental work on animals has been conducted, particularly by Dr. Samuel J. Meltzer, of the Rockefeller Institute, in New York. We would call special attention to Dr. Meltzer's article which appears in this issue on page 371.

The striking results obtained with the use of Ehrlich's 606 gives us hope that a great forward step has been taken in the treatment of syphilis, and from the general action of the organic arsenical compounds it is reasonable to assume that a cure will yet be found for the dread and intractable disease, trypanosomiasis, or sleeping sickness. The older preparations, represented by atoxyl, soamin, and arsacetin, have been found to be uncertain in their action and often to produce untoward results, so that they are used with some hesitancy. As noted, the dioxydiamidoarsenobenzol dihydrochloride, to give it is full name, appears to carry a promise of safer application and more immediately efficient results.

"THE LADY WITH THE LAMP."

This was one of the terms of endearment by which Miss Florence Nightingale was known, and our own Longfellow wove it into the verse

> A lady with a lamp shall stand
> In the great history of the land,
> A noble type of good,
> Heroic womanhood.

She was also named "the angel of the Crimea," "the queen of nurses," and "the soldier's friend." All these epithets were richly deserved by Miss Nightingale, for she worked a veritable revolution in the care of the sick and injured, not only in war, but also in civil life. She did not confine her benefactions to those of her own country; advice asked for and received from her added much to the efficiency of the United States Sanitary Commission in our Civil War, and she is undoubtedly to be credited with the initiation of a state of things which led to the Geneva Convention of the Red Cross. We here reproduce a paragraph from an article which appeared in our issue for April 4, 1908, apropos of her having received the freedom of the city of London:—

> If Hippocrates was the father of medicine—and it is customary to so designate him—surely Miss Florence Nightingale may justly be called the mother of such nursing as has now, over practically the whole civilized world, happily supplanted the old style of nursing, almost always worthless and often truly abominable. The nurses' training school of to-day is her creation. Probably it would have come eventually in any case, but it was her marvelous career in the Crimean war, backed by the conscience of the British people, that endowed her with the prestige required to carry out her lofty purposes in the face of foolish and fussy officialdom.

Last Saturday Miss Nightingale died at her home, in London, in the ninety-first year of her age. Though she had been feeble for a long time, she is said to have preserved her mental faculties unimpaired to the last. She is understood to have been named Florence on account of her having been born, of English parents, in the city of Florence, Italy. Her people were wealthy, and she might have lived a life of enjoyment, but at an early age she took up charitable work and fitted herself for a nursing career by service in the Lutheran Hospital, in Kaiserwerth, near Düsseldorf, Germany. She was always more ready to give than to receive, and she devoted the whole of a large sum of money voted to her by the British government to the Nurses' Training School of St. Thomas's Hospital, over which she personally presided for many years.

She will ever be held in grateful remembrance all over the world.

THE DIAGNOSIS OF FACIAL ERYSIPELAS.

Ordinarily, says the *Practitioner* for August, the diagnosis of erysipelas of the face is readily made, but the writer of the article proceeds to remark that mistakes are not infrequently committed by the unwary, who are apt to consider any inflammatory and œdematous condition of the face as erysipelatous, especially if the swelling leads to closure of the eyelids. In this way, says our contemporary, the common "swelled face" of toothache is taken for erysipelas, but this error is easily rectified. Urticaria also, as well as some forms of erythema, may simulate erysipelas, but the multiplicity of the lesions, their rapid subsidence, and the sudden appearance of fresh ones at distant points soon dispel any doubt that may be entertained.

Herpes zoster occurring in the area supplied by the first division of the fifth nerve, the writer goes on to say, may be associated with so much redness and swelling as to resemble erysipelas, but its strict limitation to the nerve distribution, bounded absolutely by the median line, the characteristic arrangement of the flat vesicles in clusters, and the dark color of the resulting crusts are sufficiently distinctive. Acute eczema of the face often leads to such considerable redness and swelling as to present a close likeness to erysipelas, but it is far more likely than erysipelas to affect both sides of the face from the beginning, its lesions may be multiple, its border is ill defined, and beyond the border may be seen an "advanced guard" of irregularly scattered small red papules; moreover, the surface is not so tense as in erysipelas. In the great majority of cases erysipelas is accompanied by considerable constitutional disturbance and fever, from which the other affections mentioned are usually free. But urticaria may be febrile, and erysipelas is now and then observed with absence of fever. Finally, the writer remarks that the chief characteristic of erysipelas is its tendency to invade fresh tissues by spreading rapidly. "This," he says, "is certainly not found in any other superficially similar affection, and, if borne in mind, mistakes in diagnosis are avoidable."

We may add our impression that rhus poisoning is sometimes mistaken for erysipelas, at least for a time, since it is often confined to the face or is so prominently manifested in that situation that any lesions which exist elsewhere are not complained of and consequently may be overlooked. Rhus poisoning, however, is not usually accompanied by any constitutional disturbance, and the itching is out of all proportion to the other sources of complaint. Attention is very properly called by the *Practitioner's* writer to the ill defined border of the redness in eczema. The sharpness of the border in erysipelas is perhaps not so often borne in mind as it ought to be. Almost if not quite invariably it will be found that, at least in some portion of its extent, the redness of erysipelas is sharply defined, not shading off gradually to the tint of the surrounding skin.

THE EPIDEMIOLOGY OF POLIOMYELITIS.

We must heartily commend the action taken by the American Orthopædic Society and the American Pædiatric Society in calling upon sanitary officials to adopt some such measures as are in force in Massachusetts for ascertaining the modes of origin and manner of distribution of the crippling disease known as poliomyelitis, or epidemic infantile spinal paralysis. A resolution adopted, which is given in full in our news columns, is now being urged upon the various State and municipal health authorities by a very competent committee of which Dr. Robert W. Lovett, of Boston, is the chairman, and Dr. Irving M. Snow, of Buffalo, the secretary. While we believe that few if any of our boards of health and other sanitary authorities need to be urged in such a matter, the action taken is creditable to the organizations concerned.

DEATHS UNDER ANÆSTHETICS.

The following statements are of interest in connection with the occasional suspicion that a death has been caused by an anæsthetic.

An inquest was recently held by the city coroner of London relative to the death of a tramcar driver who died in Guy's Hospital under ether given for the purposes of an operation. The coroner, Dr. Waldo, on opening the case, told the jury that the house surgeon who gave the anæsthetic had written to him and offered to certify the cause of death as a natural one from peritonitis. He (the coroner), however, was obliged under the provisions of the Coroner's Act to hold public inquiries on all cases reported to him where there was a reasonable presumption that the death was a violent or unnatural one; and in all such cases it was his custom to order an autopsy to be made by an independent skilled pathologist.

The widow stated that her husband, who was a strong, healthy, and sober man, after partaking of fried fish and potato "chips" on the previous day, had complained of pain in his stomach. A local doctor who was called in sent him to Guy's Hospital, where he arrived the same day at 4 p. m. Not be-

ing satisfied with the stated cause of death, she had asked the coroner to hold an inquest. A house surgeon at Guy's Hospital said the case had been one for immediate operation, and he had given ether by the "open" method. Five minutes later the patient died suddenly, the abdomen having been shaved preparatory to a section for appendicular inflammation, which operation had not been begun. Prior to giving the ether (made from rectified spirit and not from dutiable ethyl alcohol) he had injected strychnine. Without an operation the deceased had only "a one per cent. chance." Asked by the coroner why the giving of the anæsthetic had not been undertaken by one of the ten visiting special anæsthetists at Guy's Hospital, considering the fact that the patient was suffering from frequent vomiting and the seriousness of the case, the witness said the patient was prepared for the operation at 6 p. m., by which time all the specialists had left the hospital.

Before entering office as house surgeon the witness had produced satisfactory evidence of knowledge in the administration of anæsthetics, which he had given on 380 occasions without any previous fatality. Mr. Ernest C. Hughes, acting resident surgeon at Guy's Hospital, said he did not think the case required any very special skill and the previous witness was a highly competent anæsthetist. The visiting anæsthetists at Guy's Hospital were looked upon more as teachers than as actual administrators of anæsthetics.

The coroner remarked that, with regard to Guy's Hospital, he noticed that in nearly every one of the forty-four cases of those reported as having died under anæsthetics during the past nine years—on all of which he had held public inquests—the anæsthetic had been given by junior residents. In another great general hospital during the same period, where it was the custom for the anæsthetic in serious cases to be given by visiting and resident specialists, there had been fewer fatalities, and very few indeed, not more than two or three, at the hands of the junior residents.

In difficult cases he could not help feeling that it would be better if anæsthetics were administered either by seniors or, if by juniors, at least in the presence and under the guidance of specialists. In October, 1907, a Southwark jury, inquiring into the death of a young woman who died under chloroform given by a junior resident for an operation for exophthalmic goitre, recommended this reform to the authorities at Guy's Hospital, also that full details of all administrations of anæsthetics should be kept in proper registers by the hospital authority. In reply, Mr. Hughes said that the jurors' rider in question had resulted in a full inquiry by the hospital authority. As a practical outcome of such inquiry the four following reforms had since been introduced: 1. The appointment of two additional teaching visiting special anæsthetists, now making ten in all at the hospital. 2. The requirement that all candidates should, before appointment on the junior staff, produce evidence of special practical knowledge in the administration of anæsthetics. 3. The keeping of a full register of all administrations of anæsthetics. 4. The introduction of the administration of ether by the "open" method, such as was in use on the first discovery of its anæsthetic property and at the present time largely practised in the United States.

Dr. Bernard Spilsbury, lecturer and pathologist at St. Mary's Hospital, who had made an autopsy in the presence of the anæsthetist, said death was due, in his opinion, to the rupture of a small ulcer in the intestines, which had led to peritonitis. He did not think death had been hastened by the ether. In answer to the coroner, the witness said they had a resident special anæsthetist at St. Mary's Hospital, which was the case also at a few of the other big metropolitan hospitals. The surgeons agreed with Dr. Spilsbury as to the cause of death.

In summing up, the coroner said he felt sure all would be pleased to hear of the reforms introduced and of the decrease of late in the number of deaths under anæsthetics at Guy's Hospital. Since 1907, in which year there were eleven fatalities, the deaths reported had been few and far between. Two deaths had been inquired into during the present year. In the first of these—a death under ether given by the "open" method—the verdict was to the effect that the cause of death was not in any way influenced by the anæsthetic. The second case, the one now under consideration, seemed on the evidence to be a similar one to the former death. As a result of the inquests referred to, questions had from time to time been asked in the House of Commons. This had led to the late Home Secretary (Mr. Gladstone) referring the matter to the Departmental Committee appointed to inquire into the law relating to coroners and the practice in coroners' courts. The first recommendation of this committee in their report was to the effect that every death under an anæsthetic should be reported to the coroner, who, after inquiry, should determine whether it was desirable to hold an inquest or not. To the first part of this suggestion he heartily agreed, since it was a well known fact that only a small proportion of deaths under anæsthesia in private practice and nursing homes ever came to the notice of registrars or of coroners. From the latter part of the recommendations, however, he dissented, since he did not think such a change in the law at all favor-

able to the public interest. He preferred the English open method of inquest by coroner and jury to the private inquiry as held by the procurator fiscal in Scotland into violent or unnatural deaths. Such secret investigations were, he thought, hardly favorable to a full statement of the facts with regard to so delicate a matter as that of fatal anæsthesia. The jury returned a verdict in accordance with Dr. Spilsbury's evidence.

News Items.

The Alvarenga Prize of the Hufeland Society, for which the subject proposed this year was Increase of Blood Pressure Considered from an Ætiological and Therapeutical Standpoint, has been awarded to Dr. Hasebroek, of Hamburg.

Physicians Licensed in Minnesota.—At the June examinations the Minnesota State Board of Medical Examiners granted licenses to practice medicine in the State to twenty-seven candidates by examination and to thirteen by reciprocity.

The North Carolina State Board of Health.—At a recent meeting of the board, held in Wrightsville, N. C., Dr. J. E. Ashcroft, of Monroe, was elected a member of the board, to complete the unexpired term of the late Dr. J. A. Burroughs.

The Cameron Prize Awarded.—This prize, which is awarded every five years by the University of Edinburgh for important progress made in medicine, has been awarded this year to Professor August Bier, of the University of Berlin.

The Medical Association of Georgia.—At the midsummer meeting of the First District Medical Society, held in Savannah, on August 8th, the following officers were elected: President, Dr. T. J. Charlton, of Savannah; first vice-president, Dr. M. M. Holland, of Statesboro; second vice-president, Dr. R. V. Martin, of Savannah; secretary and treasurer, Dr. J. M. Sigman, of Savannah.

A Hospital for Inebriates in Cleveland.—The department of health of Cleveland, Ohio, is planning to establish an institution for the care and treatment of inebriates, and as soon as the necessary funds are available for the purpose the work will be started. According to present plans, the hospital will be started on a small scale, and enlarged from time to time as it is found necessary.

The Southern Minnesota Medical Association held its eighteenth annual meeting in Winona, on August 4th, and elected the following officers for the ensuing year: President, Dr. Theodore L. Hatch, of Owatonna; first vice-president, Dr. Hugh F. McGaughey, of Winona; second vice-president, Dr. John E. Crewe, of Rochester; secretary and treasurer, Dr. William T. Adams, of Elgin.

Officers of the Washington State Medical Association.—At the annual meeting of this association, held recently in Bellingham, the following officers were elected to serve for the ensuing year: President, Dr. Wilson R. Johnson, of Spokane; president-elect, Dr. Leon L. Love, of Tacoma; vice-presidents, Dr. Grant Calhoun, of Seattle, and Dr. J. Earl Elsie, of Pullman; secretary, Dr. Curtis H. Thompson, of Seattle; treasurer, Dr. Park W. Willis, of Seattle. The next meeting will be held in Spokane.

Gifts and Bequests to Charity.—By the will of Mr. Henry Dixon, London University will receive £10,000, the income of which is to be used for scientific research.

Through the will of Mrs. Frances Irving Weston, of Boston, the Massachusetts Institute of Technology will receive $10,000 to establish two scholarships.

Mr. Henry M. Faxon has made a gift of $15,000 to the City Hospital, Quincy, Mass., for the erection of a nurses' home in connection with the hospital.

By the will of James B. Crane, who died in Westfield, Mass., on July 21st, Noble Hospital will receive $10,000.

The Southeastern Hospital for the Insane, at Madison, Ind., was formally opened for patients on August 1st, and on August 15th the transfer of inmates from the Central Hospital for the Insane, at Indianapolis, will be made. The new institution furnishes accommodations for 1,200 patients.

The Fairfax County, Va., Medical Society met in annual session at Alexandria on Thursday, August 5th, and elected the following officers for the ensuing year: Dr. C. R. Dufour, of Washington, D. C., president; Dr. William P. Caton, of Accotink, Va., first vice-president; Dr. W. A. Wells, of Washington, D. C., second vice-president; Dr. Ralph Quick, of Clarendon, Va., recording secretary; Dr. A. H. Coombs, of Vienna, Va., corresponding secretary, and Dr. E. L. Detwiler, of Herndon, Va., treasurer.

A New Hospital at Fort McPherson, Ga.—The erection of a new hospital at Fort McPherson is under consideration, and Brigadier General George H. Torney, surgeon general of the Army, is thoroughly inspecting the old hospital there, to decide whether or not any of the old buildings can be used in the new hospital. Two plans are under advisement. One calls for the tearing down of all the old buildings and the erection of new ones; the other provides for the use of some of the old buildings for administrative officers and the erection of new ones for the wards. The surgeon general's report will decide which plan will be followed.

Proposed Amalgamation of the Army and Navy Medical Services in Great Britain.—According to a statement in the *Army and Navy Journal*, Surgeon General Evatt, C. B., of the British army, proposes the amalgamation of the Royal Army Medical Corps with the Royal Naval Medical Service, under the collective title of the United Service Medical Corps, with a marine or naval and a military or army branch, and a single gateway of admission. The proposal also aims at joining the Royal Naval Sick Berth Staff with the Royal Army Medical Corps, and in future recruiting the former from the ranks of the latter with men detached for a time to the marine division of the corps for service afloat. The suggested reorganization is completed by the proposed union of the Royal Naval Female Nursing Service with the Army Female Nursing Service.

Fifth Congress of French Speaking Physicians of North America.—Dr. Frederick A. Gadbois, of Sherbrooke, Quebec, general secretary of the Association of French Speaking Physicians of North America, has issued an announcement of the forthcoming fifth annual meeting of the association, which will open at the St. Charles Borromeo Seminary in Sherbrooke on Tuesday evening, August 23d, at 8 o'clock, and continue in session during Wednesday and Thursday. France and the medical societies of the country are to be officially represented and the Surgical Society of Paris has delegated to represent it Dr. Picqué, surgeon in chief of the Hôpital Laribosière, surgeon in chief of the Asiles d'Aliénés and officer of the Legion of Honor. He will be accompanied by two representatives of the Ecole Médicale, and the Society for the Advancement of Science. Papers of great scientific importance are promised and the indications point to a most successful meeting.

The Winifred Masterson Burke Foundation.—More than eight years ago Mr. John Masterson Burke, of New York, announced a donation of $4,000,000, to found and endow a home for convalescents in or near Manhattan. The real estate and securities in which the money was invested have increased in value, and two other gifts were made by Mr. Burke during his lifetime. When he died last December the endowment was worth $5,000,000. Mr. Burke left the greater part of his estate to the foundation, and relatives contested the will, but Surrogate Thomas decided last week that it was valid. Personal property worth about $2,000,000 has thereby been added to the fund, so that the trustees now have about $7,000,000 with which to carry out Mr. Burke's plans. So far nothing has been done toward building the home, the site not even having been selected. It is said that the trustees of the foundation will not undertake any active work toward carrying out the plans, apart from the conservation of the property, until all possibility of further litigation has been cleared away. Dr. John S. Billings is one of the trustees of the foundation.

Physical Tests in the Navy.—A plan for physical tests for officers of the Navy and Marine Corps is being prepared by Surgeon General Stokes and will soon be presented to the Navy Department. It is expected that these tests will follow closely the physical order which Major General Leonard Wood, the new chief of staff of the Army, recently laid down for the land forces. Scientific investigation into the question of exercises is being made, and an officer of the Medical Corps of the Navy, who is now on duty at the London School of Tropical Medicine, has been instructed to study the Swedish system in use in the British Navy.

Candidates for the Medical Reserve Corps of the Army.—During the week beginning July 18th a preliminary examination was held in Washington to enable applicants to qualify for appointment in the Medical Reserve Corps of the Army. One hundred and thirty-one applicants were invited to appear for examination; 26 failed to report for examination; 24 failed to pass the physical examination and were rejected; 77 began the examination, and two withdrew after taking a part of it. The complete result of the examination has not yet been announced, but on August 3d the faculty of the Army Medical School held a meeting, and after considering the papers that had been examined reported 26 candidates as qualified. These candidates will be recommended for a commission in the Medical Reserve Corps, and in due time will be brought to the Army Medical School for the session which begins on October 1st.

The Medical Society of the Missouri Valley.—Announcement is made by the secretary of the society, Dr. Charles Wood Fassett, of St. Joseph, Mo., that preparations are all complete for the twenty-third annual meeting of the Medical Society of the Missouri Valley, which will be held in Council Bluffs, on Thursday and Friday, September 1st and 2d, under the presidency of Dr. A. B. Somers, of Omaha. The Oration in Surgery will be given by Dr. George Gellhorn, of St. Louis, and will be illustrated by lantern slides. The Oration in Medicine will be delivered by Dr. George Howard Hoxie, dean of the Medical Department of the University of Kansas, his subject being Arthritis. Dr. Herman E. Pearse, president of the Missouri State Medical Association will present two unusual cases of ovarian abscess, complicated by pyosalpinx and sinus of the urinary bladder. In addition to these three important contributions the preliminary programme contains a long list of papers on subjects of interest to the general practitioner, as well as to those engaged in special lines, and the meeting gives promise of being a great success. The local arrangements are in the hands of a committee composed of Dr. John F. Sprink, chairman, Dr. H. B. Jennings, Dr. J. H. Cole, and Dr. F. Earl Bellinger, and a good programme of entertainments has been prepared for the visiting members and their friends.

The Harvey Society Lectures.—The following course of lectures has been arranged by the society for the season of 1910-1911:

October 15th: Professor Dr. H. Chiari, of Strassburg, Germany, on Die Bedeutung der pathologischen Autopsie und sonstiger pathologisch anatomischen Untersuchungen.

November 12th: Professor W. E. Castle, of Harvard University, on Unit Characters in Heredity.

December 10th: Professor Harvey Cushing, of Johns Hopkins University, on Certain Clinical Aspects of Dyspituitarism.

January 14th: Professor Arthur R. Cushny, of the University of London. (Subject to be announced later.)

February 4th: Dr. Thomas B. Osborne, of the Connecticut Agricultural Experiment Station, New Haven, on The Chemistry of the Proteins.

February 25th: Professor Jacques Loeb, of the Rockefeller Institute for Medical Research. (Subject to be announced later.)

March 18th: Professor H. Gideon Wells, of the University of Chicago.

These lectures are open to the public and are given on Saturday evenings at the New York Academy of Medicine. At a meeting of the society held in April, 1910, the following officers were elected for the year 1910-1911: President, Dr. Simon Flexner; vice-president, Dr. John Howland; treasurer, Dr. Edward K. Dunham; secretary, Dr. Haven Emerson; council, Dr. Graham Lusk, Dr. S. J. Meltzer, and Dr. James Ewing.

The International Gynæcological Congress Invited to Meet in the United States.—Dr. Charles A. L. Reed, of Cincinnati, president of the American Committee and government delegate to the International Gynæcological Congress, to be held in St. Petersburg, next month, recently cabled to the Russian committee that if the cholera prevented its meeting there, the American medical profession would gladly welcome it in this country, under the administration of the same Russian savants who are now its executive officers. The congress was to have been held in St. Petersburg in 1908, but was then deferred on account of cholera.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Department of Health for the following statement of new cases and deaths reported for the two weeks ending August 13, 1910:

	August 6th		August 13th	
	Cases.	Deaths.	Cases.	Deaths.
Tuberculosis pulmonalis	674	137	498	145
Diphtheria and croup	214	17	216	25
Measles	179	11	144	13
Scarlet fever	85	2	83	5
Smallpox	1	..	1	..
Varicella	9	..	14	..
Typhoid fever	96	9	105	12
Whooping cough	55	9	36	10
Cerebrospinal meningitis	6	5	4	5
Total	1,319	190	1,101	215

To Prevent the Spread of Cholera.—Measures have been taken by the United States representatives abroad to prevent the introduction into this country of cholera through the United States ports. At the instance of the Public Health Service at Washington the United States consular officers at Hamburg, Bremen, Antwerp, and Rotterdam and other Continental and British ports are working under cable instructions, which require them to detain steerage passengers from cholera infected districts in Russia and to disinfect baggage prior to embarkation for the United States. These instructions were given on account of the recent reports of many cases in Russia and the prospect of spread of cholera in Europe. The United States quarantine regulations which are now being enforced provide that steerage passengers and crews shall be detained five days in suitable houses or barracks located where there is no danger from infection. All baggage at those ports is being disinfected, and cabin passengers, coming from cholera infected districts, who embark at clean or infected ports, must produce satisfactory evidence as to their place of abode during the five days immediately preceding their embarkation.

Florence Nightingale Dead.—Florence Nightingale, the heroine of the Crimean War, died at her home in London on Saturday, August 13th, aged ninety years. Her long life was devoted to the cause of saving life and relieving suffering in times of war and pestilence and to the general improvement of hospital service at all times and everywhere. To her we owe the modern system of army field hospitals. In accomplishing her great work which has resulted in revolutionizing field sanitation, Miss Nightingale had not only to contend with disease in the Crimean campaign, but her greatest fight was against the prejudice which existed against a woman engaging in work of that character. At the beginning of the Crimean War not a woman nurse was employed in the military hospitals. It was not until the war was over and the generals and medical men at the front enthusiastically praised her work that public sentiment was turned in her favor and she became a heroine whose fame has endured from 1855 down to the present time. A brief summary such as this cannot adequately present the work which she accomplished, but it has had the greatest possible influence on field hospitals and the treatment of the wounded in all wars that have occurred since that time. When she returned to England the British public raised a fund of $250,000 and presented it to her as a token of the esteem in which they held her. This she accepted, but not for herself. She used it to establish a school for nurses at St. Thomas's Hospital, London. She superintended this school for many years, finally retiring from active work for a much needed rest. In 1907 she received from King Edward the Order of Merit, the statutes being modified to admit of her appointment, and she is supposed to be the only woman who has been so honored. In 1908 she was given the freedom of the city of London. Although her health was never robust after the Crimean War, yet she wrote much that was of value.

Vital Statistics of New York.—During the week ending August 6, 1910, the deaths from all causes reported to the Department of Health of the City of New York numbered 1,413, corresponding to an annual death rate of 15.64 in a thousand of population, as compared with a rate of 16.45 for the corresponding week in 1909. The annual death rate for the week in each of the five boroughs was as follows: Manhattan, 15.90; the Bronx, 17.35; Brooklyn, 14.14; Queens, 16.18; Richmond, 28.29. There were 124 stillbirths. The deaths of children under five years of age numbered 614; 472 under one year of age, 87 between one and two years of age, and 55 between two and five years of age. The deaths from diarrhœal diseases under five years of age numbered 301; over five years of age, 317. There were 5 deaths from sunstroke, 11 from suicide, 5 from homicide, and 82 due to accidents. Two thousand six hundred and ninety-four births and 769 marriages were reported during the week.

The Health of Chicago.—During the week ending August 6, 1910, the following new cases of and deaths from transmissible diseases were reported to the Department of Health of Chicago: Typhoid fever, 76 cases, 5 deaths; measles, 67 cases, 1 death; smallpox, 1 case, 0 deaths; whooping cough, 62 cases, 4 deaths; scarlet fever, 61 cases, 5 deaths; diphtheria, 86 cases, 11 deaths; chickenpox, 9 cases, 0 deaths; tuberculosis, 110 cases, 78 deaths; pneumonia, 17 cases, 47 deaths. Seven cases of contagious diseases of minor importance and 9 cases of diarrhœal diseases were also reported, making a total of 505 cases reported. The deaths under two years of age from diarrhœal diseases numbered 143. There were 2 deaths from sunstroke, and 31 deaths from congenital defects and accidents. The total deaths of children under five years of age numbered 234, of whom 173 were under one year of age. The total deaths from all causes, exclusive of stillbirths, numbered 605, corresponding to an annual death rate of 13.9 in a thousand of population, as compared with a death rate of 16.0 for the preceding week and 12.3 for the corresponding week in 1909.

The Health of Philadelphia.—During the week ending July 9, 1910, the following cases and deaths from transmissible diseases were reported to the Department of Health of Philadelphia: Malarial fever, 2 cases, 0 deaths; typhoid fever, 16 cases, 3 deaths; scarlet fever, 20 cases, 0 deaths; puerperal fever, 0 cases, 2 deaths; erysipelas, 2 cases, 0 deaths; chickenpox, 10 cases, 0 deaths; diphtheria, 52 cases, 7 deaths; measles, 82 cases, 3 deaths; whooping cough, 56 cases, 11 deaths; pulmonary tuberculosis, 83 cases, 44 deaths; pneumonia, 11 cases, 23 deaths; mumps, 14 cases, 0 deaths; trachoma, 1 case, 0 deaths; tetanus, 1 case, 0 deaths; anthrax, 1 case, 0 deaths. There were 11 deaths from tuberculosis other than that of the lungs, and 146 deaths from diarrhœal diseases under two years of age. There were 41 stillbirths, 20 males and 11 females. The deaths of children under five years of age numbered 247, 180 under one year of age, 42 between one and two years of age, and 25 between two and five years of age. The deaths from all causes numbered 510 in an estimated population of 1,500,595, corresponding to an annual death rate of 16.59 in a thousand of population.

The Epidemiology of Poliomyelitis.—At the recent meeting of the Congress of American Physicians and Surgeons, held in Washington in May, a joint session of the American Orthopædic and American Pædiatric Societies was held and the subject of epidemic poliomyelitis was discussed. The following resolution was adopted:

"It having been shown by recent epidemics and investigations connected with the same that epidemic infantile spinal paralysis is an infectious, communicable disease that has a mortality of from five to twenty per cent., and that seventy-five per cent or more of the patients surviving are permanently crippled, State boards of health and other health authorities are urged to adopt the same or similar measures as are already adopted and enforced in Massachusetts for ascertaining the modes of origin and manner of distribution of the disease with a view of controlling and limiting the spread of so serious an infection."

A committee, with Dr. Robert W. Lovett, of Boston, chairman, and Dr. Irving M. Snow, of Buffalo, secretary, was appointed to urge the various State and municipal health authorities to take up the work of investigation of the various foci of epidemic poliomyelitis, to study its epidemiology, and to instruct the public that the disease is at least mildly communicable.

Pith of Current Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL

August 4, 1910.

Danvers State Hospital, Laboratory Papers, 1910.

1. The Laboratory Work, with Especial Relation to the Policy Formulated by Dr. Charles Whitney Page, Superintendent, 1888-1898, 1903-1910, By E. E. Southard.
2. The Margin of Error in the Diagnosis of Mental Disease; Based on a Clinical and Anatomical Review of 250 Cases Examined, By E. E. Southard.
3. A Study of the Dementia Præcox Group in the Light of Certain Cases Showing Anomalies or Scleroses In Particular Brain Regions, By E. E. Southard.
4. Ten Obscure Cases of Mental Disease: A Clinical and Anatomical Study, By L. B. Alford.
5. A Study of the Senile Spinal Cord in Cases of Mental Disease, By A. S. Hamilton.
6. A Histological Study of the Thyreoid Gland in Mental Disease, with Special Reference to Chronic Thyreoiditis, By A. H. Peabody.
7. Incidence of Heart Disease in Acute Psychoses, By Albert A. Hornor, 2d.
8. Bacterial Invasion of the Blood and the Cerebrospinal Fluid by Way of Mesenteric Lymph Nodes: A Study of Fifty Cases of Mental Disease, By E. E. Southard and Myrtelle M. Canavan.
9. Bacillary Dysenterv Subsequent to the Epidemic of 1908 (December, 1908, to June, 1910), By Myrtelle M. Canavan.
10. Organisms Recovered from Dysentery Cases Studied Bacteriologically, December, 1908, to June, 1910, By Myrtelle M. Canavan
11. The Persistence of Agglutinins for Bacillus Dysenteriæ, together with a Series of Conglutination Tests, By Myrtelle M. Canavan.
12. Mannite and Nonmannite Fermenting Organisms in a Case of Dysentery, Complicated by Hæmorrhagic Endometritis Probably Due to a Third Organism, By Myrtelle M. Canavan.
13. Primary Adrenal Tuberculosis in a Case of Juvenile General Paresis with Meningeal Infection. (Bacillus Coli Communis). By E. T. F. Richards.
14. A Case of Autochthonous Sinus Thrombosis, By F. Robertson Sims.
15. The Diagnosis of Fractured Skull as Aided by the Finding of Brain Tissue in the Vomitus, By Gordon T. Brown.
16. Note Concerning Brain and other Visceral Weights in Sixty-six Subjects Showing Carcinoma, By Newell B. Burns.
17. Some Effects of Overfeeding with Fats in Certain Cases of Insanity, By Herman M. Adler.

2. The Margin of Error in the Diagnosis of Mental Diseases.—Southard finds in a series of 250 cases of mental diseases that ten cases (four per cent.) remained both clinically and anatomically obscure. Seven cases (2.8 per cent.) had diagnostic doubts settled after the clinic either intra vitam or post mortem. Sixty-six cases (twenty-six per cent.) were doubtful clinically, but the correct diagnosis was obtained in forty-nine of the sixty-six (seventy-four per cent. of the doubtful group). One hundred and eighty-four cases (seventy-four per cent.) were clinically certain, and the clinical diagnoses were confirmed (or not altered) by autopsy in 163 of the 184 (eighty-nine per cent.). The correct diagnosis was obtained in 212 of 250 cases (eighty-five per cent.).

3. Dementia Præcox. — Southard gives a lengthy summary of his paper; among other statements he says that existent evidence for the or-

ganic nature of dementia præcox is not wholly convincing, since the cytological changes described are found also in cases of toxic deliria and in cases complicated by severe venereal disease and the stratigraphical changes described are found also in certain senile cases without characteristic symptoms of dementia præcox. Resort must, therefore, be had to the topographical idea, for the adequate exploitation of which total brain sections, with cytological exploration of all areas, are necessary. The curability of certain cases, the remissive character of some cases, the speedy disappearance of particular symptoms, the persistent complexity of reaction in some instances, the absence of characteristic severe projection system symptoms, all indicate that the process is histopathologically mild and that the focal changes found will be but slightly destructive or even irritative (in the sense of slight injuries readily repaired or compensated for).

5. **Senile Spinal Cord in Mental Disease.**—Hamilton states that a review of the literature concerning the senile spinal cord demonstrates both clinical and anatomical uncertainty. It is uncertain how many separate clinical entities depend on senile spinal changes, whether physiological involution is responsible for the development of any spinal symptoms, and how far arteriosclerosis accounts for the anatomical changes found.

7. **Heart Disease in Acute Psychoses.**—Hornor, 2d, observes that the percentage of hearts probably normal functionally is higher in manic depressive insanity than in dementia præcox. Dilatation of heart occurs more frequently in manic depressive insanity than in dementia præcox. Leaving out dilatation of heart, the incidence of every cardiac lesion in dementia præcox is greater than the incidence of the corresponding lesion in manic depressive insanity. The incidence of individual heart lesions is relatively greater in the acute psychoses than in all psychoses combined, except that the relative frequency of hypertrophied hearts in manic depressive insanity is below the average.

8. **Bacterial Invasion of the Blood and the Cerebrospinal Fluid by Way of Mesenteric Lymph Nodes.**—Southard and Canavan conclude that in the terminal exhaustions of the insane bacterial invasions are almost the rule. Perhaps otherwise normal and quite healthy subjects may, more often than hitherto suspected, show bacteriæmia or even cerebrospinal fluid invasions. The intestinal wall is a leading atrium, for such invasions, an atrium perhaps the more penetrable by reason of atrophic processes frequently displayed. The livers and especially the spleens are much underweight in the majority of our cases. Mesenteric and bronchial lymph nodes lead the other nodes in proportion of diseases displayed in their total collection. Often only one or two of the lymph nodes in the group exhibited gross lesions.

17. **Overfeeding with Fats in Certain Cases of Insanity.**—Adler finds that the organism has provision normally for converting the fatty acid products of digestion into neutral fats. This power may be diminished under certain circumstances. In those cases in which fatty acid is not entirely converted into neutral fats, the toxic effects of the fatty acids are neutralized in other ways. One of the methods by which free fatty acid is neutralized is by conversion into insoluble soap. When this occurs, the body suffers a depletion in its calcium and magnesium content.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

August 13, 1910.

1. Visual Requirements in the Public Services of the United States, By William Campbell Posey.
2. The Rôle of Pathology and Physiology in Preventive Medicine, By Walter L. Bierring.
3. The Rôle of the Pharmacist in Preventive Medicine, By Joseph P. Remington.
4. Autointoxication and Allied Intestinal Troubles as a Possible Cause of Certain Vascular and Functional Disturbances of the Eye, By Hiram Woods.
5. Development of the Temporal Bone, By G. W. Boot.
6. The Adaptability of Scientific Infant Feeding to General Practice, By H. Lowenburg.
7. Childbirth after Apparent Menopause, By L. Buckle.
8. Vein to Vein Transfusion of Blood, By George Dorrance and Nate Ginsburg.
9. The Campaign against Diphtheria and Scarlet Fever in Chicago, By D. Rawlings.
10. What Can Health Departments Do to Control Scarlet Fever? By C. Hampson Jones.
11. The Relation of Modern Dentistry to the Tuberculosis Problem, By S. Adolphus Knopf.
12. Further Observations on the Milk Supply of Washington, D. C., By G. Lloyd Magruder.
13. Scab Formation in the Nose. Its Ætiology and Prevention, By W. Peyre Porcher.
14. Report of a Case of Aneurysm of Coronary Artery, By Walter R. Hewitt.
15. The Strauss Reaction for the Diagnosis of Glanders, By B. L. Arms.
16. A Note on the Treatment of Pernicious Anæmia, By Alfred C. Croftan.
17. Filariasis on the Island of Guam, By George B. Crow.
18. Two Aids in Making Blood Counts, By Sterling Bunnell.
19. Formaldehyde Solution for Treatment of Appendix Stump, By A. Merrill Miller.

4. **Autointoxication a Possible Cause of Certain Disturbances of the Eye.**—Woods thinks it possible that there is enough association between such eye disturbances as blepharitis, lid and conjunctival disturbances, conjunctival hyperæmia and functional disturbances of the ciliary muscle, refraction and muscular errors, etc., and manifest symptoms of autointoxication from constipation to justify the belief of causative relation. There is reason to think that the same eye troubles can follow intestinal lesions which do not essentially produce toxic products. It seems that the physiological chemist is not yet in position to help us much in proving the diagnosis, and that until he is we must study these obstinate cases from a clinical standpoint only. If we are ever to explain them or to relieve them, we must view the eye as the receiving as well as the sending end of what we call remote disturbances.

6. **Scientific Infant Feeding.**—Lowenburg is in favor of carefully adapted cows' milk in infant feeding in such cases in which the mother is not able to feed the infant herself.

8. **Vein to Vein Transfusion of Blood.**—Dorrance and Ginsburg favor vein to vein transfusion of blood. The surgeon, they remark, is dealing with the superficial vessels, which are easy of access. Moreover, a gradual flow is obtained so that danger of engorgement and the resulting sudden

dilatation of the right heart are avoided. The size of the structures and the ease of access make it a simpler procedure than the anteriovenous method. The principal advantage is its simplicity. There is no danger to be considered except the possible one of hæmolysis. The indications for performing transfusion are as follows: The sudden depletion of the vascular system due to grave accidents, or following operations, as in the case of severe tonsillar hæmorrhage, and in hæmorrhage occurring during the course of typhoid fever; hæmophilia; melæna; poisoning with carbon dioxide, coal tar derivatives, and other substances characterized by the production of methæmoglobin; and pellagra, in which the transfusion of blood from a patient, who has recovered from the disease, has been found beneficial in a number of reported cases. It is of no value in severe infections, in the cachexia of cancer, and in tuberculosis. In pernicious anæmia and in leuchæmia, transfusion has disappointed the great expectations which the introduction of the method aroused for the cure of these hopeless conditions. Transfusion is decidedly harmful in cases of purpura hæmorrhagica, and whenever hæmolysis is taking place.

10. **Control of Scarlet Fever.**—Jones thinks that health officers can control scarlet fever much more effectually under the following conditions: 1. If they endeavor to instruct the people through every channel of education that their protection for the present lies mainly in their own efforts; that they must consider all sore throats as dangerous to others; that the danger lasts during the entire period of desquamation; that this danger is lessened by antiseptic baths; that the infection of air passages and accessory sinuses frequently continues longer than the period of desquamation; that isolation is the only means of preventing the spread of the disease. 2. If they urge not only the establishing of municipal hospitals for scarlet fever, but also advocate the early removal of all cases of the disease to it wherever proper isolation cannot be successfully established at the patient's home. 3. If they urge on the people correct information concerning the serious results, such as deafness, endocarditis, nephritis, etc., of even mild cases of scarlet fever. 4. If they urge on medical teaching institutions that medical students should not be granted diplomas until they have studied cases of infectious diseases under competent instruction.

12. **Milk Supply.**—Magruder thinks that milk should be produced under conditions that would entitle it to be entered under class 1 (certified milk) or class 2 (inspected milk) as prescribed by the Washington Milk Conference; or, in case it does not conform to the requirements for these classes, that it should be efficiently pasteurized (class 3). This classification, prepared by Dr. A. D. Melvin, and approved by the Washington Milk Conference, is more fully described in Circular 114 of the Bureau of Animal Industry. It is a classification that will give us, not bad, indifferent, and good milk, but good, better, and best milk. To produce milk under any of these classes rigid inspection is required. The prices that must be charged for the first class make it almost impossible for the man of moderate means to avail himself of such milk. Class 2 can be produced at a lower price, but would still cost more than ordinary milk. Hence the masses must resort to the milk of class 3. With the precautions suggested, they would reasonably be assured in the use of this milk of a safe and wholesome supply at but a trifling advance in the price.

13. **Scab Formation in the Nose.**—Porcher states that potassium iodide in large doses is the best drug in scab formation in the nose. It will open the accessory sinuses and give free outlet to all inflammatory exudates, pus collections, etc., and thereby enables the patient to expel the accumulations and prevent the noisome odor. The well known influence of potassium iodide in producing lacrimation and increasing the nasal secretion naturally suggests that drug as the most efficient for this purpose. It was found necessary, however, to give it in increasing doses until a very large amount was ingested daily before this desirable result was accomplished. Of course this amount varied greatly in different individuals. Many patients were found who would absorb from 600 to 900 grains a day before the nasal secretions would remain fluid and this without any noticeable ill effects whatever; in fact, on the contrary, the gain in flesh would be rapid and the improvement in the general health would be very marked. Among the most prominent of the ætiological factors to which it has been attributed may be mentioned syphilis, inhalation of dust, tuberculosis, anæmia and chlorosis, tobacco and alcohol, hypertrophic catarrh, effects of a previous purulent rhinitis and suppuration of the accessory sinuses of the nose, fatty degeneration of the infiltrated cells, the trophoneurotic theories and finally, penetration of microorganisms.

15. **Diagnosis of Glanders.**—Arms says that in the diagnosis of glanders the Strauss method is the best, more than one guineapig should be used. Before inoculating it is well to make a microscopical examination as a guide to dosage. A culture from the swab often aids in the early diagnosis. Both guineapigs should be kept under observation for a month, and if a lesion of any kind is present, autopsy should be performed and cultures made.

MEDICAL RECORD.

August 13, 1910.

1. The Value of Surgical Procedures in the Solution of the Problem of Race Betterment, By J. Ewing Mears.
2. Report of Five Cases of Tetanus and Remarks on the Treatment of the Disease, By Charles D. Fox.
3. Electric-Sleep in Paths of Displacement Currents: New Findings, By Louise G. Robinovitch.
4. Important Events in the Development of Gastroenterology, By Julius Friedenwald.
5. Why the Exceptional Child is Entitled to Receive Training Suited to Its Needs at Public Expense, By M. Neustaedter.
6. Further Observations on Alcoholic Gastritis and Its Relation to Experimental Gastritis in Animals, By Nellis B. Foster.
7. Primary Streptococcus Diphtheria, By David H. Orgel.
8. Aerotherapy, By J. George Sauer.

1. **Race Betterment by Surgical Procedures.**—Mears remarks that the surgical procedures advocated in promoting race betterment should in no sense be regarded as punitive in character. They

should be performed as all surgical measures are, or should be instituted for the purpose of obtaining curative results, if possible, in the defective subjects. The highest motives of philanthropy should inspire the surgeon and should guide him in his work to the position of a noble benefactor of the human race, not only in protecting future generations from the contaminating influences of a maintained flow of degeneracy, but also in bettering the unhappy defective subject, by removing the causes which contribute to his disordered condition—thus opening his mental powers to cultivation, developing his moral attributes, promoting his physical betterment, and eventually making him a useful member of society.

2. **Treatment of Tetanus.**—Fox reports five cases of tetanus treated with drugs and serum. The drugs used were morphine and atropine sulphate, hypodermically, chloral, bromide, cannabis indica, chloroform, oxygen, and antitetanic serum. One patient, for example, received in 52½ hours: Sodium bromide, gr. 370; chloral, gr. 200; morphine sulphate, gr. 1 ⅔; atropine sulphate, gr. 1/16; serum, c.c. 250. Total amount during the last 24 hours: Sodium bromide, gr. 220; chloral, gr. 130; morphine sulphate, gr. 1⅔; atropine sulphate, gr. 1/16; serum, c.c. 160. As tetanus is such an extremely fatal disease, the prophylactic treatment of wounds is of far greater importance than the treatment of the disease after it has developed. The resistance of the disease to treatment and the consequent high mortality can be understood better when we remember that tetanin, the toxine of tetanus, is said to be four hundred times more toxic than strychnine. Prophylaxis includes freely laying open all suspicious wounds, removal of extraneous matter, thorough cauterization, and then allowing the wound to granulate. In addition to these local measures a subcutaneous injection should be made of 1,500 units of antitetanic serum. The tetanus bacillus being anaerobic lacerated wounds with deep pockets and punctured wounds, such as result from being stabbed or shot, and from stepping on rusty nails, naturally are the ones most apt to be followed by the development of tetanus. For this reason it is wise to use the serum prophylactically in all such cases. In spite of the great value of antitetanic serum as a prophylactic this agent is not as efficient when used for curative purposes after symptoms of tetanus have developed.

7. **Primary Streptococcus Diphtheria.**—Orgel finds that the severe form of primary streptococcus diphtheria occurs oftener than we have been led to believe. Complications of suppuration of the cervical glands occur frequently, and complications of acute exudative nephritis occur in all severe cases and in some become chronic. In the treatment, he has found very little of any avail, except thorough toilet of the mouth and nose, with stimulation to tide the patient over the time until the toxæmia subsides. Diphtheretic serum has been given even in large doses, up to 20,000 units without any effect. Antistreptoccus serum has also been given without effect. The only thing he has found of value is the spraying of the throat with hydrogen peroxide, ice bag to the neck, and douching of the mouth and nose with salt solution. When the urine becomes scanty or suppressed, hot rectal irrigations or hot water bags to the region of the kidneys are advised.

LANCET

July 30, 1910.

1. Evolution of the British Medical Association and Its Work,- By Henry T. Butlin.
2. Recent Progress in Medical Science, By J. Mitchell Bruce.
3. Malignant Disease, By H. Gilbert Barling.
4. The Pathology of Prostatic Enlargement, By F. T. Paul.
5. Helminthic Infection and Its Relation to Eosinophilia: A Study Based on the Examination of the Fæces of 562 Cases and of the Blood of 102 Cases in South China, By G. Duncan Whyte.
6. A Case of Volvulus of the Cæcum and Ascending Colon, By R. J. Pye-Smith.
7. The Successful Treatment by Colon Lavation of Some Cases of Eczema, Psoriasis, Urticaria, Acne, and Pruritus, By Alfred Mantle.
8. A Note on Cæsarean Section Undertaken in the Presence of Septic Infection; with a Report of a Case, By R. Drummond Maxwell.
9. The Prevention and Correction of Deformity Following Arthritis of the Hip Joint, By R. P. Rowlands.
10. On Pretuberculosis and Prepulmonary Tuberculosis, and Their Diagnosis in Relation to School Inspection, By William Ewart.
11. A Method of Staining Deep Colonies in Plate Cultures *in situ* in Agar Media, By Edward Dodson.
12. A Case of Thrombosis of the Inferior Mesenteric Vein, By Arthur A. Straton.

4. **Prostatic Enlargement.**—Paul observes that the accepted theories as to the cause of prostatic hypertrophy all fail because each can only apply to a limited number of cases. The prostate and the breast are both controlled by their respective dominant sexual glands and respond to their influence in a similar way in health and disease. Both organs are subject to a disturbing influence at the climacteric period, which may, and frequently does, result in a hypertrophic change. In such change the microscopical appearances in the two organs show a remarkable resemblance in all essential details. Prostatic hypertrophy, like the mammary involution hypertrophy, occurs only at the climacteric period, whereas there is no known neoplasm which is so strictly limited to an age period. For these reasons he thinks that prostatic hypertrophy is not due to a chronic inflammation of septic or specific type nor to a neoplasm, but that it is an involution change similar in character to that with which we are familiar in the mammary gland.

5. **Helminthic Infection and Eosinophilia.**—Whyte demonstrates statistically that the greater the varieties of parasite that infest a man, and the more numerous the individuals of each variety, the greater degree of eosinophilia he is likely to show. This will be especially marked if he is between twenty and forty years of age, and will be less noticeable if he is older or is suffering from some form of tuberculosis.

7. **Treatment of Skin Diseases by Colon Lavation.**—Mantle remarks that there is ample proof that, in some individuals, ingested toxines absorbed in the elementary canal show the chief evidence of that absorption by changes in the skin. He proposes the following treatment of such cases, which consists in colon lavation: An alkaline sulphur water is generally used both for the intestinal

douche and for the immersion bath which follows it. The object of the internal douche is to wash away old fæcal matter and mucus from the colon and to give the mucous membrane an antiseptic dressing. This is done in the following way. A long rubber tube, after being sterilized by boiling, is passed into the sigmoid and is attached to a hydrostatic douche, when from twenty to forty ounces of sulphur water at a temperature of 105° F. pass into the colon at a pressure of two feet, the patient lying first on the right side, then on the back, and lastly on the left side during the operation. This is repeated, and the ejecta after each douche are carefully examined and reported upon by a skilled attendant. Antiperistalsis of the colon normally exists, and is an important factor in this treatment, enabling rectal injections to reach the ascending colon and cæcum when diseased. A warm immersion bath of sulphur water follows the internal douche, and when in this bath a hot douche at a higher temperature plays upon the wall of the abdomen under water from a large nozzle with fine perforations, and is chiefly directed over the site of the colon. The immersion bath not only opens out the peripheral circulation, and thus relieves any congestion of the viscera which may exist, but is beneficial to the skin and nervous manifestations the result of autointoxication.

11. A Method of Staining Deep Colonies.—Dodson describes his staining method for deep colonies in plate cultures *in situ* in agar media as follows: Pour on Stephen's scarlet writing fluid—which acts better than ordinary water soluble eosin—and allow to remain on until the deep colonies are well stained. This usually takes from ten to twenty minutes, according to the thickness of the agar. It is advisable until one has become accustomed to the naked eye appearance of the stained colonies to inspect under low power to see if the ink has penetrated to the deepest layers. Pour off and blot the edges and press lightly with soft paper to express any ink that may have run under the edges of the slab. Now pour on Löffler's methylene blue, diluted with an equal volume of distilled water, and tilt the slide well until the ink is discharged from the agar, and it turns violet. Before this end is attained it may be necessary to pour off the first portion of blue and to put on a second. Then wash in a small stream of water directed from a wash bottle to carry away any deposit of altered methylene blue that may be formed on the surface of the agar. Decolorize in spirit until the color ceases to come out in a visible cloud; finish dehydration in aniline oil, pass into xylol, and mount in Canada balsam. It will be found that the organisms are stained a deep purple and the agar medium a very pale green. With a 1/12th oil immersion lens the individual organisms can be perfectly seen, while the colonies of those bacteria and yeasts that send off streamers and chains through the medium are very beautiful. Each individual organism is as plainly visible as is an ordinary stained film preparation, but it is a distinct advantage to be able to see the organisms in their exact relative positions; those organisms that are dichotomous, for instance, form interesting subjects of study when stained in this manner. In some of the fermentative organisms isolated from milk there is shown to be at first a proliferation of oval yeastlike cells, but when—either through exhaustion of the food supply or the poisoning of the medium with the products of metabolism—the environment becomes unsuitable, then long rodshaped cells are formed which radiate from the colony. A number varying from eight to twenty of the yeastlike cells bud off from the end of the rod and then another of the long cells is pushed through the medium.

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT.

July 19, 1910.

1. How Far is Our Operative Treatment of Uterine Hæmorrhages and Myomata Influenced by the X Ray Treatment? By Kroenig and Gauss.
2. The Behavior of the Ehrlich-Hata Preparation in the Human Body, By Fischer and Hoppe
3. What Relations Exist between Iodine (Postassium Iodide) and the Outcome of the Seroreaction? By Stuempke.
4. Raynaud's Disease, By von Hösslin.
5. Carbohydrate Digestion and Preparations of Diastasis, By Riehl.
6. Plenthysmographic Studies of Bodily Work, By Geissler and Zybell.
7. The Conservative Treatment of Furuncle of the Face, By Wrede.
8. Nervous Sequelæ of the Railroad Accident at Mülheim, By Recker.
9. The Applicability of the Autenrieth-Königsberger Colorimeter as a Hæmometer, By Samuely.
10. The Serodiagnostic Typhus Reaction of Mandelbaum, By Kessler.
11. Köhler's Bone Disease, By Schaeffer.
12. Adrenalin and Osteomalacia, By Kownatski.
13. Thiosinamin Poisoning, By Kölliker.
14. Casuistic Contribution to the Subject of Injuries of the Intestine in the Hernial Sac, By Heddaus.
15. A New System for the Transportation of the Wounded on the Railroad, By Waller.
16. Gonorrhœal Ulcer of the Cornea,

1. Operative and X Ray Treatment of Uterine Hæmorrhages and Myomata.—Krönig and Gauss state that the x ray treatment is indicated in myomata and hæmorrhagic metropathies in which the radical operation is associated with a disproportionately great danger to life, such as cases of great anæmia, degeneration of the cardiac muscle, marked adiposity, and bronchial catarrh, and that in the future such cases will be treated in that manner exclusively. A percentage of mortality from four to six is too high in a disease which is not immediately threatening to life though it certainly does greatly reduce the working capacity. When these cases that are unsuited for operative treatment are excluded the radical operation will become a satisfactorily safe procedure, with a mortality of not over one or two per cent. In strong individuals the operative treatment is the procedure of choice, because in such patients it is very safe and because the after effects, when the ovaries are left behind, are less decided than those when amennorrhœa has been attained through irradiation with the x rays. Under these conditions the operation is indicated the more the lower the social condition of the patient, as the working capacity needs to be restored as quickly as possible.

3. Relations between Iodine and the Outcome of the Seroreaction.—Stümpke concludes that potassium iodide, or iodine, is able to produce a complete inhibition in a hæmolytic system; that this effect is associated with a certain concentration of

the medicament; that within certain limits even sublimate hæmolysis is hindered by the addition of potassium iodide; that a positive Wassermann reaction may be obtained in rabbit serum after the incorporation of large doses of iodine; that such an influence in human serum has not been established; and that this last result is analogous to the statement of Brauer that the content of mercury in the human organism exerts no direct influence on the outcome of the Wassermann reaction.

10. **The Serodiagnostic Typhus Reaction of Mandelbaum.**—Kessler finds that a distinctive diagnosis may be made by this test between typhus and paratyphus, but that it may be made with more certainty by the Widal reaction.

13. **Thiosinamin Poisoning.**—Kölliker reports an additional case of thiosinamin poisoning observed in a young woman. Four injections were given every other day without producing any disturbance, but the fifth injection was followed by a chill, sweat, general discomfort, and a severe headache.

16. **Gonorrhœal Ulcer of the Cornea.**—Adam points out that the central ulcer of the cornea met with in gonorrhœal ophthalmia is usually not caused by the direct action of the bacteria, but is due to necrosis caused by thrombosis of the nutrient vessels.

WIENER KLINISCHE WOCHENSCHRIFT

July 14, 1910.

1. Tuberculous Infection in Sucking Guineapigs, By Julius Bartel.
2. Tetany in Advanced Age, By Karl Wirth.
3. Muscular Rigidity as a Sign for the Detection of Lung Diseases, By Oskar Orszag.
4. Operation on the Hypophysis, By Johann Fein.
5. The Immune Body Treatment of Pulmonary Tuberculosis According to C. Spengler, By Mieczyslaw Gantz.
6. The Determination of the Acidosis by a Simple Procedure for the Estimation of the Ammonia in the Urine of Diabetics, By E. Marcovici.
7. Medical Impressions from a Trip in North America, By A. von Eiselberg.

2. **Tetany in Advanced Age.**—Wirth says that tetany met with in advanced life belongs for the most part to the gastric group, is a consequence of dilatation of the stomach, and may run a latent course. Certain signs which may be diagnostic of the latter condition should, he thinks, be looked for in every case of gastrectasia and when found be considered indicative of operative treatment. It is very probable that in gastric tetany the functional capacity of the epithelial corpuscles plays a part. He suggests that it is possible that more cases of tetany, particularly latent, are to be met with in advanced age in connection with gastrointestinal affections than has hitherto been thought.

3. **Muscular Rigidity as a Sign of Lung Disease.**—Orszag says that the rigidity of the muscles to be felt by a light touch is a constant symptom in pulmonary tuberculosis, but of no special value for early diagnosis. The examination of the electric excitability of the muscles is better than objective measures for the determination of the activity of the disease.

4. **Operation on the Hypophysis.**—Fein describes an operation which he has performed on the cadaver. An incision is made from the frenulum of the upper lip to the last tooth through the mucous membrane and periosteum down upon the facial wall of the antrum of Highmore which is laid bare and then removed. The mucous membrane of the antrum is then removed, a portion of the medial wall chiselled away, the sphenoidal sinus entered and removed as thoroughly as possible with chisel, forceps, and sharp spoon. The posterior part of the septum is then removed with a few blows of the chisel, the sphenoidal rostrum cut through, and the septum between the cavities removed. This leaves the bone beneath the hypophysis exposed and ready to be cut through with the chisel as in other methods of approach.

AMERICAN JOURNAL OF THE MEDICAL SCIENCES

August, 1910.

1. Trichinosis: A Clinical Study of Fifty-two Sporadic Cases, By W. Gilman Thompson.
2. An Epidemic (Fourteen Cases) of Trichinosis, due to Eating Boiled Ham, with Special Reference to the Occurrence of Eosinophilia, By Henry Albert.
3. Intestinal Diverticula: A Pathological and Clinical Study, By John A. Hartwell and Russell L. Cecil.
4. Skin Rashes in Typhoid Fever, By John Phillips.
5. Extensive Sarcoma of the Heart, Involving the Bundle of His, By Charles F. Martin and Oskar Klotz.
6. The Association of "Rheumatic Fever" and the Erythema Group of Skin Diseases, with a Report of Four Cases, By Oscar M. Schloss.
7. Acquired Hæmolytic Icteroanæmia: Widal's Syndrome, By Wilfred M. Barton.
8. Typhoid Bacilli Carriers and Their Relation to Public Health, By J. P. Simonds.
9. Chronic Nephritides, due to Acute Systemic Infection, By Heinrich Stern.
10. Pernicious Anæmia, with Remission for Seventeen Years, By Alexander McPhedran.
11. Diagnostic Puncture in Tuberculous Abscesses, By James K. Young.
12. Primary Tumor of the Velum, with Marked Compression of the Ventricle, By Harlow Brooks.

1, 2. **Trichinosis.**—Thompson says that there should be no difficulty in determining promptly a correct diagnosis of trichinosis based upon the observation of the following symptoms: 1. Acute onset usually with vomiting and abdominal cramps. 2. A high grade of eosinophilia, invariably present; usually above thirty per cent. and frequently much higher—even above eighty per cent. 3. A high grade of temperature, often reaching 104° F. or more, and lasting, in lessening degree, for two to six weeks. 4. Puffiness of the eyelids and face, with pains in the eyes occurring in one fourth of the cases. 5. Dyspnœa and diaphragmatic breathing occurring without cyanosis in about one fourth of the cases. 6. The generalized muscle pains, cramps, soreness, and prostration, causing sometimes deceptive apparent immobility. 7. The sudden occurrence of symmetrical circumscribed corneal hæmorrhages in a patient whose bloodvessels are not degenerated, should give rise to a suspicion of trichinosis.—Albert states that trichinosis is, no doubt, of far more frequent occurrence than is usually supposed. Many cases are diagnosticated as cases of typhoid fever, rheumatism, ptomaine poisoning, cholera morbus, etc., or considered as obscure conditions. It usually results from the eating of uncooked seasoned or smoked pork or sausage, but may result from the eating of boiled ham which has not been exposed to a sufficient temperature for a sufficient length of time to kill all of the parasites. A temperature of from 170° to 200° F., maintained from one to six or more hours, depend-

ing upon the size of the ham, destroys the trichinæ in the vast majority of cases. All pork consumed in any form other than boiled ham should have all parts raised to the boiling point. The diagnosis of trichinosis occurring in isolated cases is frequently a matter of difficulty, and often can be greatly assisted by means of an examination of the blood. So far as we know at the present time there is no condition in which the percentage of eosinophiles in the blood reaches such a high number so constantly as in trichinosis. The total leucocyte count is usually, but not invariably, increased in trichinæ infection. The number of neutrophiles is relatively, and sometimes absolutely, diminished during the period of eosinophilia.

3. **Intestinal Diverticula.**—Hartwell and Cecil remark that diverticulum of the intestine is a common condition. The large bowel is the most frequent site, particularly the descending colon and the sigmoid. Children and young adults are subject to diverticula, and to the secondary changes occurring in them. All diverticula are probably true in their incipiency. The false characteristics are the results of their growth. An inherent weakness existing in the muscularis is probably an important factor in the ætiology of diverticula. In the small intestine this weakness appears to exist along the mesenteric attachment. Diverticula undergo the same pathological changes as the appendix vermiformis, and give rise to much the same general symptoms. These pathological changes are not uncommon.

5. **The Bundle of His.**—Martin and Klotz report a case which came to autopsy showing an extensive sarcoma of the heart, which occupied two thirds of its mass. The sarcomatous invasion had replaced the heart muscle to a great extent, not only in its outer walls, but also in the auricular and ventricular septa. Histological examination of the septum demonstrated a disorganization of the bundle of His. Although it could not be definitely stated that the bundle of His had been completely obliterated, yet truly recognizable Purkinje fibres were not found. If the distorted musclelike elements appearing beneath and among the connective tissue fibres of the septal endocardium were elements of the bundle of His, then these elements had been greatly reduced in number, and those that were present had been compressed and distorted by the sarcomatous infiltration. In view of the extensive disorganization of the bundle of His, it is difficult to correlate the clinical findings with the generally accepted views concerning this bundle. If the bundle of His is alone responsible for the maintenance of the proper rhythmic contraction of the ventricle, then we must assume that an extremely small number of these fibres can carry on that function for the proper maintenance of life. In the case described, the few Purkinje fibres which remained (if such they were) were very much altered by sarcomatous invasion and pressure. The function of these few cells must have been considerably diminished, and could only have supplied impulses to a small portion of the ventricle. The authors conclude that it is more than likely that the heart is dependent not alone upon the bundle of His for the transmission of impulses and the proper correlation between the auricle and ventricle, but that other factors, such as the cardiac muscle, central nerve fibres, and cardiac ganglia with their nerve plexuses, each and all may assume a portion of the work of maintaining a proper control and relationship of auricle and ventricle.

8. **Typhoid Bacilli Carriers.** — Simonds observes that there is ample evidence for considering the danger of the spread of typhoid fever by chronic bacilli carriers as worthy of the attention of health officers; epidemics, caused by bacilli carriers, are characterized by the occurrence of small groups of cases at intervals of a few months in the immediate vicinity of the carrier, or in the territory supplied by some food product handled by him; the most practicable way of reducing the danger to the public from these individuals is by excluding them from work that brings them in contact with food products.

9. **Chronic Nephritides.** — Stern states that kidneys, acutely affected at one time, are thereafter possessed of a lowered degree of resistance in many, and of a diminished functional activity in some of the instances. It is very difficult, so far as positive demonstration is concerned, to establish an ætiological relationship between an existing chronic nephritis and a systemic infection that had been of a more or less transitory nature. Clinical evidence, however, prompts us to regard acute systemic infection as one of the causes of chronic renal disease. The typical renal involvement concomitant with or following an acute infectious disease is of a parenchymatous nature. About half of the chronic nephritides evolving from nephritic processes that have originated during or after an acute infectious disease, are predominatingly parenchymatous; in about twenty per cent. of the cases indurative processes follow in the wake of acute parenchymatous inflammation, or supervene in the presence of subchronic or chronic parenchymatous states; and in about thirty per cent. of the cases amyloid lesions concur with the original parenchymatous affection. The direct transformation of an acute nephritis into a chronic form has been observed in comparatively few instances only; however, the successive transition from an acute nephritic process through subacute and subchronic stages to the chronic condition can be traced clinically with more or less accuracy in a considerable number of cases.

Proceedings of Societies.

MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Annual meeting, January 17, 1910.

The President, Dr. ROBERT T. MORRIS, in the Chair.

Election of Officers.—The following officers were elected: President, Dr. Reynold Webb Wilcox; chairman for the Borough of Richmond, Dr. William Bryan; member of the Council, Dr. Louis Faugères Bishop.

Some New Tests for Test Meal and Fæces Examinations.—These were presented by Dr. ANTHONY BASSLER, who described his methods and apparatus for obtaining results by bacterial action. He called attention to the fallaciousness of the results to be noted in many of the other clinical diagnostic measures, such as the Schmidt and Strausberger test diets, the Schmidt connective tissue test, the

Günzberg and Sahli packages, and the Einhorn bead test. He maintained that in nearly all cases of early gastric carcinoma and in latent ulcer no benefit was to be derived from the ordinary methods of test meal analyses, while the bacterial tests with test meals might be attended with much significance, and that abnormal bacterial conditions of the colon were more frequently matters of assumption than of accurate clinical diagnosis, since not all of the bacterial conditions of the gut showed indol in the urine. He said that the dietetic and neurotic conditions of the stomach did not give more than the merest bubble, though in ulcer and cancer the proportion was higher. He described his method of fæces work for diagnosticating the bacterial conditions of the colon on the following basis: In the normal individual the fæces and water test shows a low gas result on the strict meat diet, a higher one on the ordinary mixed diet, and the highest of all on the strict carbohydrate diet. When in the nutritive media the gas result is higher than normal, the patient is placed upon a strict meat diet and the watery suspension test made. Should the gas result be found higher than a meat diet ought to give, the diagnosis of the indolic form of chronic intestinal putrefaction is suggested. On the other hand, should the gas result in the nutritive media be lower than normal, the patient should be placed upon a strict carbohydrate diet, in order to determine whether the gas from the watery suspension of fæces still remains below what is ordinarily found in an individual on such a diet. When the result is positive, a diagnosis of the more common saccharobutyric form is suggested.

The tests are made by means of a specially constructed fermentation tube, the upright closed, or anaerobic, limb of which has a capacity of 15 c.c., is graduated in percentages, and has an open bulb of 30 c.c. capacity. The apparatus, over all, is less than six inches in height, will go into a medium sized incubator, and is so constructed that 25 c.c. sufficiently fills the instrument; 25 c.c. being an amount which can usually be taken from an Ewald meal and still leave enough for the secretory and motor observations. Into it is placed a portion of the return of a simple or mixed test meal, the free hydrochloric acid of which has been neutralized with a normal solution of sodium hydrate, using dimethyl solution as an indicator; or, for the chemical test of fæces, 7.5 grammes of the soft end of a stool or 10 c.c. of a more fluid stool, each of which is mixed with 25 c.c. of sterile water. In the bacteriological tests with media the tube is filled with a 2 per cent. dextrose bouillon and inoculated with about 1 c.c. of the test meal or with 3 or 4 drops of a watery suspension of fæces or a slightly smaller amount of the stool itself. In the case of the chemical tests of the fæces the weighed portion of the stool is thoroughly mixed with water in a casserole. Any very large masses of cellulose or vegetable substance are removed, more fæces being added to make up the deficiency. The fermentation tube is then placed in a water jacketed oven, where it is allowed to remain at a temperature of 37° C. for twenty-four hours. If, when examination is to be made, more or less floating fæces and incorporated gas are seen at the top of the fluid in the upright limb, several moderate size shot are placed in the bulb, which is then filled with water and so corked that no air from without shall be present between the fluid and cork, and the instrument is shaken until the shot have split up the floating fæces; after which the gases which have escaped into the bulb are passed back into the closed limb, the cork is withdrawn, some of the fluid is run out, and the observations are made as follows:

First, the total amount of contained gas is noted, after which some of the fluid is withdrawn from the bulb and examined for indol and urosine and, with the nutritive media, also for aerobic bacteria; care being taken that the tube is not shaken and that the one or two drops of media removed be from the film on the surface and at different levels under this, though not down as far as the crotch between the two sides of the instrument. The next step in the nutritive media test is to obtain specimens of the important anaerobic bacteria. These are best extracted by means of a pipette, which should be carefully introduced into the lower part of the anaerobic limb, and about 5 c.c. of media sucked up. In tests for the amounts of bacteria growing at different levels of a fluid medium Dr. Bassler has found that at the end of twenty-four hours most of the anaerobic bacteria are at the bottom of the tube. Absorption of the carbon dioxide from the accumulated gases is now effected by introducing into the closed limb, with the pipette, 2 c.c. of a saturated solution of sodium hydrate (making sodium carbonate), and the tube is inclined in order to permit this heavy solution to run some distance up into the closed portion; after which it is allowed to stand for the time necessary to observe that the fluid no longer rises in the tube. In a number of tests to note the accuracy of this chemical method he has found that the remaining carbon dioxide never exceeds from 5 to 10 per cent. of the original amount, a result close enough for chemical work. The remaining mixed gases are then tested in twin bottles, into which they are driven, when the cock is opened by means of an attachment and blowing. In the first bottle, which contains a weak solution of neutral azolitmin (about two hundred times as sensitive as commercial litmus), the reactions of the gases are noted, a control in a test tube being used to show the color change. In the chemical and bacteriological fæces tests, in addition to obtaining the reaction of the gases, the fluid in the apparatus should be tested with litmus when the instrument is filled, and the chemical change at the end of the twenty-four hours noted. The second bottle contains lead water to denote the presence of sulphureted hydrogen, the deepness of the coloring showing the relative amount. The hydrogen and marsh gas may be burned at the drawn tube outlet, though as both burn with an indistinguishable blue flame, and neither of these gases is important in a clinical way, this procedure can be omitted, if desired.

The Convulsive Toxæmias of Pregnancy.—Toxæmia of pregnancy, said Dr. Ross McPherson in this paper, was the name applied to cases characterized by headache, bowel disturbances, nausea, vomiting, delirium, and coma, and usually accompanied by œdema, and it often occurred without previous warning. As we did not know the cause, we were at a loss to find a satisfactory treatment,

and up to the present the treatment had been empirical and extremely inefficacious. The mortality, both maternal and fœtal, was appalling. It had been customary to divide the toxæmias into those with convulsions and those without; the latter being spoken of as plain toxæmias, and the former as eclampsias. From the statistics computed from 61,151 cases in the service of the New York Lying-in-Hospital, it was found that the convulsive toxæmias occurred most frequently in the months of February and March, and least frequently in December and January. This, however, was merely an interesting observation, as it was not apparent why periods of unsettled weather should have the effect of producing such a condition. It was found, again, that eclampsia occurred in approximately 1.7 per cent. of all labors in hospital practice, and in 0.09 per cent. of those in private practice; the outdoor service of the institution here representing private practice. It was almost twice as common in primaparæ as in multiparæ, and proportionately more poignant in multiple pregnancies than in single ones. In 56 per cent. of the cases the eclampsia occurred ante partum, in 34.4 per cent. post partum, and in 9.6 per cent. intra partum.

The national mortality naturally varied somewhat according to the treatment, and the figures in the literature of the subject varied from five to fifty per cent., the latter being the more nearly correct. In the 250 cases on which this paper was based this mortality was 30.8 per cent. in the hospital wards and twenty-three per cent. in the outpatient department. The difference between the two was explained by the fact that many of the hospital patients were not seen until they had been in the convulsive state for a long time, while the others were treated immediately. In this series the fœtal mortality was forty-four per cent., or slightly below the average.

To a great extent the unsatisfactory results attending the treatment of the toxæmias of pregnancy were to be attributed to the fact that for many years the pathology was in no way understood. Formerly the disease was considered to be of renal origin, and as such was regarded as a uræmia, but more careful and extended observation had shown that the kidney involvement was entirely secondary. The common lesions found were those of degeneration of the parenchymatous organs, notably the liver, followed by the kidney; less commonly by the spleen and pancreas. This took the form of the albuminous change known as cloudy swelling, passing on early in the disease to a fatty degeneration, which later, in the more aggravated forms, extended to all the tissues. In the toxæmias of the nonconvulsive type there were found zonal necroses, but in eclampsia we usually had extensive hæmorrhages in and about the portal spaces, with very little zonal necrosis. The hæmorrhages were general in character, being especially marked in the brain, about the corpus striatum, and in the fourth ventricle. The thyreoid gland was hypertrophical and might show cystic degeneration. In many cases there were œdema and hæmorrhages in the serous and mucous membranes, and occasionally subcutaneous hæmorrhages and jaundice. It would be seen, therefore, that the characteristic lesion was hæmorrhage into the parenchymatous organs, especially the liver. It had been shown, however, by Dr. Welch, pathologist to the Lying-in Hospital, that these liver lesions were not uniform.

As to the cause of the hæmorrhages noted, Welch had suggested that there was circulating in the blood a poison which, by causing agglutination of the red cells, formed emboli and, by solution of the endothelium of the bloodvessels, allowed an easy means of escape for the blood. The blood pressure was always high, running from 130 to 190, and increasing during the convulsion, which explained the cerebral hæmorrhages in young subjects, who were usually free from arteriosclerosis. Welch believed that the poison causing the intoxication, with the hæmolysis and general cell destruction, was probably an enzyme or a combination of enzymes which attacked the cells and caused their disintegration, and this statement was particularly applicable to the liver. The ordinary sources of the poison present were generally regarded as four in number—the food, fermentation in the intestine, the fœtus, and the placenta. In many cases the placenta showed no change whatever; and whether it and the fœtus furnished a portion of the enzymes attacking the maternal organism was a question which the chemist had not yet answered. Some writers still believed that the kidney played an important part in the ætiology, basing their belief on the fact that autopsy nearly always showed dilated ureters in women dying in advanced pregnancy, and it was conceivable that urinary retention might be a contributory cause. Latterly some attention had been paid to the thyreoid gland in this regard, as it generally showed some disturbance. The interesting facts brought out by recent investigations, however, were the ones just referred to in regard to the pathological findings. The pathologist had given us a more definite insight into the actual conditions existing in these convulsive toxæmias than we had ever had before. He had furnished us with more specific ideas on which to work, and it now remained for the physiological chemist to settle definitely the ætiology of the disease. It seemed certain that in the not far distant future the actual poison responsible for the trouble would be discovered; but until this had been done our treatment must be limited to the relieving of symptoms in a more or less empirical manner.

The treatment was to be divided into prophylactic, operative, and curative, and the speaker said it was obvious that, since we did not know the exact cause of the disease, we could not do more than try to remove by means of elimination the burden from the overloaded organs. The problem which we had before us was that of whether the power of the organism to excrete was greater than its power to absorb, or, in other words, whether the destruction of the parenchymatous organs was sufficiently extensive to make it impossible for them to take care of the extra work being thrown upon them. By way of prophylaxis we should watch the patient's elimination with the utmost care, and where the normal channels were not working to the best advantage aid them in every possible way. Careful and frequent examinations of the urine should be made, proper attention being paid to the presence of albumin, urea, indican, acetone, and diacetic acid. The nitrogen partition might be of service in cases where it could be availed of, but it was dif-

ficult to use and, after all, was of somewhat speculative value. When, in spite of all eliminative treatment, convulsions did occur, it was the consensus of those who had given most thought to the subject that immediate delivery was the best treatment. Of the methods employed to effect this, the one which would be most often employed was manual dilatation of the cervix combined with internal podalic version or the use of the forceps. Dr. McPherson believed, however, that there were cases, as, for example, that of an elderly primipara with a small, narrow vagina, a long cervix, and a tough and unyielding os, in which a rapid Cæsarean section was the operation of choice. During the last two or three years vaginal Cæsarean section had received an amount of attention which in his opinion was entirely unwarranted. It required special skill, and, while it had a definite place in obstetric surgery, the wholesale use of it which was at present recommended by many was greatly to be deprecated. Any operation which involved the risk of puncturing the bladder and rectum, the danger of hæmorrhage, and the difficulties of suture which this one did was not to be lightly undertaken.

The patient being delivered, in the majority of instances the convulsions would cease. Should this not occur, however, we should concentrate our efforts on two things—the controlling the convulsions and assisting elimination by the various excretory channels. For the first of these purposes the use of chloroform inhalation was quite commonly resorted to, but he felt that, inasmuch as this frequently had to be maintained for a considerable period of time, and as the lesions of chloroform poisoning were said to resemble in many ways those we were trying to combat, it was better to get along without the drug if we could find a substitute. For a long time he had been using hyoscine hydrobromide, gr. 1/100, in combination with morphine, ⅙, given hypodermically, at hourly intervals, for three hours successively if necessary, and had been highly pleased with the results obtained. Many times, after a large number of convulsions, a single dose of this character would cause a prompt cessation of the seizures, and no untoward results had as yet been observed from such treatment. In a recent report from the Rotunda Hospital, Dublin, a series of cases was cited in which morphine in extremely large doses had been used in the treatment of convulsive toxæmias, with a marked reduction in mortality, the practice having extended over a period of several years. No other measures were employed, the patients not even being delivered with promptitude; and in their latest book Tweedy and Wrench had expressed themselves with much enthusiasm on this treatment. Chloretone, in 15 to 20 grain doses, had been recommended, and was of some value. Nitroglycerin was of considerable service in reducing the pulse tension, and thyreoid extract had lately received marked attention. Veratrum was used extensively throughout the South and West, but it was difficult to understand why it should be of any particular value. In addition to the medication mentioned, large rectal irrigations of normal saline solution, or instillations of the same, were advised in suitable cases, and bleeding, followed by intravenous infusion of normal saline solution, hot packs, and free catharsis might be used. In conclusion, he said that if we understood the pathological condition underlying these toxæmic cases, we must realize that medication was of little or no value, except to relieve symptoms and to act as an adjuvant in giving the organism time to find its equilibrium, provided the destructive action on the excretory organs had not progressed too far.

Dr. John E. Welch described some of the post mortem findings referred to in the paper. Cases in which there was necrosis in the centre of the lobule, he said, did not as a rule show hæmorrhage. Of sixteen cases, in eleven there were degenerative changes, and of these, seven showed hæmorrhage, and five central necroses. Two other conditions were noted: a general autolysis and a cloudy swelling. When there was autolysis the cell was very much swollen, but the outline and nucleus remained distinct. One liver was observed in which autolysis was general throughout the organ. In two cases of cloudy swelling there was a very bad rupture. The kidney lesions in all these cases were very similar. The changes in the cells were not limited to the liver. The endothelium of the bloodvessels was involved, and one of the functions of the endothelial cells was to excrete. Thrombi were usually formed, and there was considerable hæmolysis. As to the source of the poison, this was a difficult matter to determine. In three of the fœtuses examined there was considerable fatty degeneration. The placenta did not always present a lesion. Not infrequently there was a marked apoplexy, and in certain cases which did not show hæmorrhage there was some necrosis. At present not much light could be derived from pathology. After referring to hæmorrhages into the brain, the speaker said that we could only speculate as to what would be found post mortem in any given case.

Dr. Charles Jewett said that the Lying-in Hospital was to be congratulated on the valuable researches of Dr. McPherson and Dr. Welch, of its staff. It seemed to him, however, that the treatment of eclampsia which was now advocated by the best authorities was more rational than had been assumed by the author of the paper. In the way of prophylaxis the cardinal points were to restrict the diet and to promote elimination in every possible way through the emunctories. As to anticonvulsive remedies, he had employed hyoscine and morphine together with good results. Morphine alone he had not used much, as it seemed to him to deepen the coma. In regard to veratrum, some years ago he reported a series of twenty cases in which it was used with benefit. This remedy had the effect of rapidly lowering the blood pressure, and, as its action could be maintained for a long time by the repetition of small doses, it seemed to prevent the eclamptic attacks. A convulsion had never occurred under his observation when it was employed. He had also given morphine in combination with veratrum with good results. As to operative procedure, he had met with success from lateral incisions. Personally, he had never done a vaginal Cæsarean section, and he did not think this operation should ever be undertaken in cases near term. Recently he had advised an abdominal Cæsarean section, but in his opinion neither this nor the vaginal procedure should be performed very often. As a rule, the ordinary obstetric operations were the best.

Dr. Egbert H. Grandin said that the prevailing tendency seemed to be to eliminate the general practitioner and adopt laboratory methods. The determination of the nitrogen coefficient and the like were all very well in their way. But, clinically, such tests were unnecessary for the family physician. Sufficient for his needs were the ordinary methods of urinary examination and the ability to recognize the presence of indican and the preliminary signs of acute atrophy of the liver. From a clinical point of view we had three types of trouble: 1. A mixed toxæmia, in which the liver might be at fault. 2. Intestinal disturbance. 3. Renal inefficiency. The average general practitioner was capable of recognizing these conditions, and as a rule his patient was unable to pay for elaborate laboratory tests. The necessity of prophylaxis was self evident, and the one great object of treatment was elimination. The skin, the kidneys, and the bowels should be efficiently acted upon. One of the best means of stimulating the kidneys was frequent lavage of the colon with hot salt solution. One phase of the toxæmia of pregnancy which deserved special notice was uncontrollable vomiting, as he had found that this usually indicated structural change in the liver. When convulsions were imminent or had actually occurred, the uterus should be emptied as quickly as possible, as a rule by podalic version, after lateral incision. The average practitioner was surrounded by certain limitations, and he should not attempt too much in the way of grave operatic procedures. When these were absolutely necessary, it was often best that the patient should be transferred to a hospital. For the control of the convulsions, if these continued, he thought venesection called for when there was a high tension pulse. He preferred this to the use of veratrum. In some cases he resorted to hyoscine in large doses, 1/50 grain, repeated every half hour, as long as was necessary. Morphine he never employed, as this agent did the very thing we were trying to avoid.

Dr. Frederic E. Sondern said the thing we all wanted to find out was the nature and origin of the toxine. If this was determined, the methods of diagnosis would be simple. Nothing as yet achieved in this line seemed to have a positive foundation. All we knew up to the present time was that we had a dangerous toxæmia to deal with, and practically we sought for guides to point out to us the time beyond which it was not safe to allow a patient to go. We recognized certain effects as due to the toxæmia, but we should remember that the amount of acetone found did not necessarily indicate the amount of the dangerous substances circulating in the blood. Patients differed very greatly as to the amount of toxine they could tolerate in the system, the susceptibility varying in the same manner as that to the effect of strychnine, for instance. In the examination of urine a test should be made for indican, as it was present in ninety per cent. of the cases of toxæmia of pregnancy. A test should also usually be made for acetone. If acetone was found in the urine, it meant either a partial starvation or a toxæmia. If partial starvation could be stricken out as a cause for the acidosis, we had present a toxæmia. Headaches for many days were a significant symptom, and the speaker said that an acetonuria had again and again put him on the track of a series of headaches; so that early treatment to combat the condition had been rendered available. If the acetonuria went on increasing, in spite of appropriate treatment, the case was to be regarded as a very grave one. We had next an excess of urobilin. As to the nitrogen partition, a certain amount of derangement was regarded by some as a call to induce labor at once. Dr. Sondern thought this was wrong, because often these percentages varied from day to day. A knowledge of the nitrogen partition had a certain value, but he thought we could get along without it.

Dr. I. L. Hill, speaking of operative procedures, said that the manual dilatation of a long, rigid cervix was very difficult, and also attended with the risk of causing serious results in the future. He thought venesection should not be practised before the delivery, for the reason that after this there might be severe hæmorrhage. Copious hæmorrhage, however, had this advantage, that it was almost certain to put an end to the convulsions.

The President said he had expected that more attention would be paid to the thyreoid theory of causation, based on the hypothesis that the thyreoid was unable to manage its normal proportion of excretory work. He would like to know if we were to put any confidence in such a theory.

Dr. McPherson said that in the doses of morphine which he employed the amount of the drug in the circulation was so small that it could not lock up the secretions. The effect of the combination he used was entirely different from that of either remedy alone. Personally, he did not believe in the Rotunda Hospital method of giving very large doses of morphine. At the same time, the records undoubtedly showed that under this treatment the mortality had been reduced from thirty to something under twenty per cent. He thought Dr. Hill's fear of hæmorrhage after delivery groundless, as in most of his own eclampsia cases he had found that the patient did not bleed at all. As to the thyreoid theory, he did not think that as yet sufficient evidence of its being founded on fact had been advanced to warrant very much attention. It was true, however, that one or two cases had been reported in which thyreoid medication seemed to have been attended with good results.

Book Notices.

[*We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.*]

Atlas der bösartigen Geschwülste. Von Prof. Dr. v. Hansemann, Ged. Medizinalrat. Mit 27 lithographierten Tafeln. Berlin: August Hirschwald, 1910. Pp. vi-50. (Price, 9 M.)

The study of ulcers has, during the past decade, received considerable attention. Up to the beginning of this century we approached ulcers only histologically, without receiving much information, but since then, under the leadership of Ehrlich, Jensen, and others, we have entered upon the experimental stage. But the hopes we had cherished of lifting the veil which covered the ætiology of ulcers have not been realized. The experimental study has not

added anything to our therapeutical knowledge of ulcers, and thus the only relief we can hope for our patients still lies in surgery. The early diagnosis of a malignant ulcer is, therefore, as it was twenty years ago, the *conditio sine qua non* in the treatment of ulcers, and von Hansemann's atlas will be of great help in the microscopical examination of ulcers. The book is splendidly got up. One hundred and forty well reproduced illustrations accompany a clear and readable text. The author speaks first of our methods of microscopical examination and diagnosis, and then of the ulcers proper, carcinoma, sarcoma, carcinoma sarcomatodes, malign teratoma, papillary cystoma, endothelial ulcers, and chorion epithelioma.

Claims Arising from Results of Personal Injuries. The Relation Injury Bears to Disease and Disease to Injury. A Treatise Showing How Personal Injuries May Affect Various Diseases and How Certain Diseases May Add to Claims for Accidents by Protracting Recovery. By W. Edward Magruder, M. D., Associate Professor of Clinical Medicine, College of Physicians and Surgeons, etc. New York: The Spectator Company, 1910. Pp 266.

The author has selected about fifty diseases that bear some relation to trauma, discusses the opinions of the leading medical authorities thereon, and formulates the conclusions that seem to be warranted. The enactment of workmen's compensation acts by several State legislatures, the probability that such acts will soon be general, and the fact that many physicians must be examiners for claims for accident insurance make this volume a timely and useful one.

Preparatory and After Treatment in Operative Cases. By Herman A. Haubold, M. D., Clinical Professor of Surgery and Demonstrator of Operative Surgery, New York University and Bellevue Hospital Medical College, New York, etc. With Four Hundred and Twenty-nine Illustrations. New York and London: D. Appleton & Co., 1910. Pp. xxx-650.

The purpose of this work is to furnish the general practitioner with a guide from which he can obtain information in regard to the treatment he should pursue with a patient who is to be operated on, from the time the decision to operate is reached to the moment when the patient is placed on the table, and from the period when the operation is completed until recovery is accomplished. The author believes that the time has ended when the general practitioner should act as the medium to transmit the opinion and directions of the surgeon, and that the real carrying out of the measures with regard to the preliminary and the after treatment of the patient are in the hands of the attending physician.

To attain the end, the author describes the modern method of preparation of the patient, sterilization and preparation of instruments and dressings, of sutures, of water, and cleansing solutions, of the operator and his assistant, and of the operating room. There are chapters on drainage, on suturing and dressing operative wounds, on shock and secondary hæmorrhage after operations, on vomiting, on thirst and pain, on postoperative feeding, and on operations on different regions.

The text is well illustrated, in all cases the latest technique is described, and the style is clear and interesting. The volume deserves a wide popularity.

Mind and Health. The Mental Factor and Suggestion in Treatment, with Special Reference to Neurasthenia and Other Common Nervous Disorders. By Edwin Ash, M. D., London, Bachelor of Surgery of the University of London, Member of the Royal College of Surgeons, London, etc. New York: William Wood & Co., 1910. Pp. 116.

The author states that he has endeavored to outline the important part that is played by mental influences in the causation of ill health and the great and beneficial use that can be made of the influence of mind over body in the restoration of health. The text is illustrated by many quotations and references; that to the battle of Trenton in "the American civil war," page 39, should refer to the war of the Revolution. It would have been well in the section on diseases caused by fright to add the book or journal reference to the name of the author mentioned. That insanity may be prevented by suggestion is open to grave doubt. The author is enthusiastic but too general in his description of the important aid suggestion affords in the treatment of certain neuroses.

The Simple Carbohydrates and the Glucosides. By E. Frankland Armstrong, D. Sc., Ph. D., Associate of the City and Guilds of London Institute. London, New York, Bombay, and Calcutta: Longmans, Green, & Co., 1910. Pp. ix-112. (Price, $1.20.)

This is one of a series of monographs dealing with the pure chemistry of physiological products. The introductory monograph, treating in an historical way of the development and present position of biological chemistry, has been followed by nine others of a more practical character, including the one now under review, No. 6 in the series.

The present position of the chemistry of the carbohydrates is admirably summarized. Starting with the simplest form, formaldehyde, CH_2O, the author shows that this is not formed directly in the plant, glucose, $C_6H_{12}O_6$, being first formed and then immediately converted into starch. In this monograph glucose is taken as the typical sugar, and a most informing and interesting account of its structure is given. The importance of the chemical study of glucose may be appreciated when we consider that this is the first carbohydrate to arise in the plant, and the substance from which cane sugar, maltose, starch, and cellulose are derived. As the author states, "it is also of primary importance in animal metabolism, as the main bulk of the carbohydrate in our food materials enters into circulation in the form of glucose."

In the simplest terms he opens his essay on the formation of glucose by describing its derivation from other more complex sugars, the reverse process to that already indicated. But following this the intricacies of the subject are not so simply expressed, and it will take a reader who is already well versed in the chemistry of physiological products to follow him through Chapters III and IV, on the hexoses, pentoses, and disaccharides. In Chapter V, on The Relation between Configuration and Properties, attention is drawn to the close relationship between the structure of sugars and their biological behavior, considerable light being thrown on the subject of sugar fermentation, a matter of special importance to physiologists.

The chapter on The Natural and Synthetic Glucosides is of considerable interest and importance,

a mass of information being here condensed from widely different sources. There is a good reference table of the natural glucosides and the products of hydrolysis, descriptions being given of the principal representatives of these bodies, especially of those known in medicine. In references to the mustard oil glucosides, the author fails to call attention to the fact that mustard oil is allylisothiocyanate, this being produced during distillation by the action of heat and moisture.

The value of the monograph is enhanced by an extensive bibliography giving the names of textbooks and complete references under chapter headings and subjects to the periodical literature consulted in its compilation. We regard Professor Armstrong's work as one that will take an important place as a textbook and reference work for advanced students, and a most suggestive compilation for teachers.

MEDICOLITERARY NOTES.

Every now and again we are treated to the opinion of certain "successful" merchants that the college graduate is unfitted for business and has much to unlearn. One thing a boy acquires at college is an extremely high sense of honor; money is passed from hand to hand at college without even verbal promises to repay. It is not remarkable that a graduate should find himself somewhat bewildered at his first introduction to "trade customs" of which we are now learning so much, common thievery he would have called them a year before his commercial début. It takes the young physician several years to learn that the earnest promises to pay on the part of some of his business men patients are fraudulent and that he is looked upon by the mean grafters of his town as a good thing. Bitter criticism of his fellow practitioners is put into his mouth and he is threatened with ruin if he reports infectious cases or gets fussy about a typhoid laden water supply which pays dividends to a local corporation. He will find the clergyman as hard up as himself; both prefer to remain poor rather than employ certain commercial methods which would bring the whole town to its knees before them—the production of an itemized bill in court, for example.

* * *

The proprietors of a certain aphrodisiac advertise that it is not intended as a goad to the jaded ox. The futility of exhibiting an aphrodisiac to an ox, even if not jaded, seems to have escaped their observation.

* * *

The great popularity of ginseng among the Chinese is due mainly to its supposed aphrodisiac properties. The word ginseng is said to mean miracle of the universe. The plant is considered to be a specific against vomiting, hæmorrhage, inflammation, and exhaustion. It is prepared by cutting it into minute pieces, which are boiled in a closed vessel made on the principle of Papin's digester. The decoction is taken, fasting, from four to eight days in succession. It is interesting to learn that tea is considered to be an antidote and must not be drunk for a month. As the plant is scarce and high in price, it is frequently adulterated, and to this adulteration is attributed any failure to act as expected.

* * *

It is said that at the *Halles centrales*, or great market of Paris, live pigeons are still sold as a remedy for infantile meningitis. The bird is quickly cut open and, while still warm, applied to the head of the sick child.

* * *

Among the sketches of Interesting People in the August *American* is one of Dr. William H. Welch, written by Dr. William Osler.

* * *

Dr. J. J. McCarthy writes of How the Drug Habit Grips the Unwary in the August *Pearson's*. The Fire Insurance Gouge, by Allan L. Benson, will teach the doctor to read over his fire insurance policies and to make careful inventory of his library and armamentarium.

* * *

The physician is occasionally posed between strict ethics and expediency. He may read with special interest an anonymous story, The Bookkeeper's Dilemma, in the August *Strand*.

* * *

The *Red Book* for August contains a tale, The High Grader, by Edward S. Moffett, in which the artist has reversed the usual mistake; his picture represents a man lying on his face and the legend reads "He lay supine." The story is a good and unusual one.

* * *

While the cold bath is not to be prescribed indiscriminately, it is a valuable therapeutic resource for men who have become gross through overeating and lack of exercise, but who are free from any organic cardiac or renal lesion. The reaction from a cold bath is one of the most delightful sensations attainable and has been known to epicures of the senses for many centuries. Pliny writes of the *voluptas frigoris*, which his contemporaries enjoyed by filling their baths with snow. Nero liked cold water within and without, and, curiously enough, used to have his drinking water boiled before bottling and placing it in a snowbank. A certain aqueduct in Rome, the water of which was used by the more hardy citizens for bathing, was known by the humorous name of *gelida virgo*.

* * *

It is a matter of congratulation that no grounds were found for supposing the existence of a white slave trust; there is no trade union among houses of ill fame either. As a matter of fact, recruits for the oldest profession in the world are mostly voluntary. Girls who wish to become prostitutes will always be found a little weak in the head, just as male criminals are. They are easily misled by the apparent ease and prosperity of the hetairæ and even of their less flourishing sisters, and do not see below the surface to the horrors, the drink, the disease, the companionship of the life. Reform is rare, for the prostitute is organically such, to say nothing of *facilis descensus* and the rest.

* * *

For ages, the dress of women has been the butt of man's wit and humor. Woman has, however,

solved the problem of dressing in hot weather. All the blood in the body passes in a very short time through the carotids and jugulars, which man foolishly covers with a starched wall of linen and an impervious silken cravat; woman wisely leaves them bare to the caress of every passing zephyr. Only this year has there been an attempt on the part of man to wear a common sense neck wear. The soft collar of silk or silk and wool gives the big blood-vessels a chance to cool off, while the pneumogastric nerve is doubtless grateful also for its new found liberty.

* * *

Many dentists now have a numerous clientèle that call regularly every six months for examination. How many people have the sense to undergo a physical examination even biennially? What might not be done in the prophylaxis of Bright's disease, hepatic cirrhosis, chronic prostatitis, and phthisis, to say nothing of malignant disease, if a semiannual visit to the doctor was a routine practice of every individual, voluntary to the intelligent, compulsory to the ignorant? A glorious future opens up to the general practitioner, for it is he with his personal knowledge of family history that would necessarily make these examinations. The next time the doctor lectures to the Sunday school or to the local mothers' club, let him advocate such regular inspection. There will be many wise winks and murmurs concerning easy graft, but a few intelligent auditors will see the point and their number will grow. Selah!

* * *

Those Hindus who do not discolor their teeth by chewing the betel nut, have magnificent dentures, resistant to decay and of dazzling whiteness. Scrupulous care of the teeth is a religious obligation, and such dentifrices are used as fine sand, wood charcoal, and ashes. Cow dung, calcined in the oven, is also used, and, being rich in potassium salts, proves to be an excellent preservative. Some writers have professed to find a connection between fine teeth and the habit of going barefoot, but handsome and painful shoes are only a sign of advanced civilization, just as caries is, and, above all, Riggs's disease. Fine teeth and bare feet cannot be more than syndromes.

* * *

It is recognized that modesty is largely a matter of geography; conservative Mohammedans are shocked at seeing our women expose their faces. The inhabitants of Anam, in French Indo-China, consider it improper to have nude teeth and are accustomed to stain them with successive coats of animal charcoal mixed with honey. This treatment is said to be preservative as well as ultramodest. Imagine the horror of a shrinking Anamite at seeing the teeth of a lady millionaire of California with diamonds set therein.

Miscellany.

Orange-Red Underclothing Test in the Philippines. — The *Military Journal* of August, 1910, gives the report of tests with orange-red underclothing, carried out by James D. Phalen. The summary is as follows:

The test of th orange-red underwear and hat linings was undertaken a. a result of recommendations by the inspector general of the army. The garments were prepared at the Philadelphia depot of the Quartermaster Department and were of a deep orange-red color. The shirts averaged ⅓ of an ounce heavier than the white ones worn by the controls. The orange-red drawers were of a different type from the white ones and averaged 1⅓ ounces heavier. The garments faded materially on washing, especially if exposed to the sun while drying. However, the inner surface retained much of the dye and it is not thought that the fading was so great as to destroy the value of the tests. It had been intended to equip 1,000 men with the special underwear and an equal number of controls with white, but, owing to inability to fit sufficient men from the 5,000 suits furnished, it was found impossible to equip over 500 with the orange-red garments. The men wearing the special clothing and the controls wearing the white were taken from the same companies, which were equally divided in such a way as to make the two groups as nearly as possible equal in physique. Those with long tropical service or who were exceptionally weak were excluded. The experiment was kept up during the calendar year of 1909. From the results of the whole test and the experiments the conclusion was reached that the physiological effects of the climate in the Philippines can be and probably are produced by moist heat without the aid of the sun's actinic rays, and no evidence was found that the sun's rays alone could or did produce these effects. On the contrary the test underclothing added materially to the burden of heat which the system was compelled to endure and which is probably the chief cause of tropical deterioration. Even if the actinic rays have any influence whatever on the system it is believed that they are sufficiently excluded by the khaki uniform and the campaign hat.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of and deaths from cholera, smallpox, yellow fever, and plague have been reported to the surgeon general of the United States Public Health and Marine Hospital Service for the week ending August 12, 1910:

Place.	Date.	Cases.	Deaths.
Cholera—Foreign.			
China—Amoy	Aug. 8		Present
India—Rangoon	June 19-25		3
Java—Batavia	June 19-25	48	42
Java—Samarang	June 25	Disappearing	
Russia—General	June 26-July 9	6,693	3,025
Russia—Astrakhan, government	July 3-9	3	3
Russia—Astrakhan	June 26-July 2	1	1
Russia—Baku, government	June 26-July 9	89	45
Russia—Baku	July 3-9	3	4
Russia—Bessarabia	July 3-9	17	6
Russia—Black Sea, province	July 3-9	25	11
Russia—Don, territory	June 26-July 9	1,141	558
Russia—Kertsch	July 2-9	68	31
Russia—Kharkov, government	June 26-July 3	320	168
Russia—Khazan, government	June 26-July 9	9	3
Russia—Kherson, government	June 26-July 3	291	73
Russia—Kief, government	June 26-July 9	178	103
Russia—Kuban, territory	June 26-July 9	1,355	675
Russia—Kursk, government	June 26-July 9	11	5
Russia—Moscow, government	July 12-15	2	
Russia—Nishninovgorod, government	July 3-9	4	3
Russia—Odessa	July 3-9	44	20
Russia—Orlov	July 3-9	22	8
Russia—Padolia, government	July 3-9	3	1
Russia—Poltava, government	June 26-July 9	464	163
Russia—Rjasan, government	July 3-9	15	10
Russia—Rostov on Don	July 3-9	308	99
Russia—Samara, government	June 26-July 9	78	33
Russia—Saratov, government	June 26-July 9	152	62
Russia—Sebastopol	July 3-9	5	3
Russia—Simbirsk, government	July 3-9	4	2
Russia—Stavropol, government	June 26-July 9	78	31
Russia—St. Petersburg	June 26-July 9	6	3
Russia—St. Petersburg, government	July 3-9	1	
Russia—Tambov, government	June 26-July 9	55	13
Russia—Taurida, government	June 26-July 9	432	218

Cholera—Foreign.

Place.	Date.	Cases.	Deaths.
Russia—Tchernigov, government.	June 26-July 9	165	67
Russia—Terek, territory	June 26-July 9	70	26
Russia—Tiflis, government	June 26-July 9	9	5
Russia—Transcaspian, territory	July 3-9	5	4
Russia—Transcaucasia, Tchernomorsk, Novorossysk	June 26-July 2	4	4
Russia—Vitebesk, government	June 26-July 9	3	
Russia—Volhynia, government	July 3-9	1	
Russia—Voronesch, government	June 26-July 2	1	4
Russia—Yekaterinislav, government	June 26-July 9	1,253	560
Siam—Bangkok	May 25-June 18	109	109
Straits Settlements—Singapore	June 12-18	1	

Yellow Fever—Foreign.

Brazil—Manaos	July 3-16	4	4
Brazil—Para	July 10-16	2	1

Plague—Foreign.

Brazil—Bahia	July 11-17	1	1
Chile—Pisagua	Apr. 1-May 31	14	4
Egypt—Alexandria	June 14-July 8	9	5
Egypt—Beni Soucf, province	June 17-29	2	
Egypt—Fayoum	June 17-July 11	4	4
Egypt—Galioobeeh	June 6-July 3	2	
Egypt—Garbieh	June 14-July 4	8	4
Egypt—Ishmalia	June 19	1	1
Egypt—Kena, province	June 15-18	1	1
Egypt—Menouf, province	June 14-July 12	32	7
Egypt—Minieh, province	May 31-July 2	3	2
Egypt—Port Said	June 15-July 13	10	6
Hawaii—Honolulu	July 5-12	2	2
India—Kurrachee	June 26-July 2	12	13
India—Madras	June 25-July 1		1
India—Rangoon	June 19-25		28
Japan—Osaka	June 1-25	4	4
Russia—Odessa	July 30	5	
Siam—Bangkok	May 25-June 18	4	4

Smallpox—United States.

Alabama—Birmingham	July 24-30	1	
Alabama—Mobile	July 17-30	2	
Florida—Gadsden County	July 24-30	5	
Louisiana—New Orleans	July 24-30	9	
Massachuetts—Middlesex County	July 1-31	1	
Massachusetts—Suffolk County	July 1-31	1	
Minnesota—Entire State	May 26-June 5	131	
Mississippi—Natchez	July 24-30	5	
New Jersey—Cumberland County	July 1-31	2	
Pennsylvania—Entire State	May 1-31		3
Pennsylvania—Entire State	June 1-30	7	
South Carolina—Charleston	July 1-31	12	
Tennessee—Memphis	July 13-19	1	
Wisconsin—Entire State	July 1-31	32	

Smallpox—Foreign.

Austria—Bukowina	July 10-16	1	
Brazil—Bahia	June 11-24	46	31
Brazil—Para	July 10-16	2	1
Egypt—Cairo	June 25-July 8	2	1
France—Paris	July 3-16	3	
Germany—General	July 10-16	3	
Gibraltar	July 11-17	1	
Great Britain—Liverpool	July 17-23	1	
India—Kurrachee	June 26-July 2	1	
India—Madras	June 26-July 2		1
Italy—General	July 11-17	1	
Italy—Naples	July 11-17	6	1
Japan—Formosa	June 19-July 2	1	2
Mexico—Aguascalientes	July 17-23		2
Mexico—Mexico	June 26-July 9		8
Mexico—San Luis Potosi	July 9-16	1	1
Portugal—Lisbon	July 9-16	56	
Russia—Libau	July 4-10	4	
Russia—Moscow	June 26-July 9	31	15
Russia—Riga	July 3-9	22	
Russia—St. Petersburg	June 26-July 2	25	12
Russia—Warsaw	May 1-7		8
Siam—Bangkok	May 25-June 18	2	2
Straits Settlements—Singapore	June 12-18	4	
Switzerland—Thurgau, canton	July 10-16	1	
Switzerland—Zurich, canton	July 10-16	1	
Uruguay—Montevideo	May 1-31	276	102
Zanzibar—Zanzibar	June 1-21		4

Public Health and Marine Hospital Service:

Official list of changes in the stations and duties of commissioned and other officers of the United States Public Health and Marine Hospital Service, for the seven days ending August 10, 1910:

ASHFORD, F. A., Passed Assistant Surgeon. Granted one day's leave of absence July 30, 1910, on account of sickness.

BAHRENBURG, L. P. H., Passed Assistant Surgeon. Granted six days' leave of absence from July 26, 1910, on account of sickness.

BIERMAN, C. H., Pharmacist. Leave of absence for thirteen days from July 26, 1910, revoked.

BLUE, RUPERT, Surgeon. Granted eight days' leave of absence from August 7, 1910.

CLEAVES, F. H., Acting Assistant Surgeon. Granted six days' leave of absence from August 1, 1910.

DEERHAKE, WILLIAM A., Acting Assistant Surgeon. Granted five days' leave of absence in July, 1910, under paragraph 210, Service Regulations.

ELFERS, J. C., Acting Assistant Surgeon. Granted thirty days' leave of absence from August 8, 1910.

FOX, CARROLL, Passed Assistant Surgeon. Relieved from duty in the Hygienic Laboratory and directed to proceed to Manila, Philippine Islands, and report to the Chief Quarantine Officer for duty.

GLOVER, M. W., Passed Assistant Surgeon. Leave of absence for ten days from July 25, 1910, amended to read three days from July 25, 1910.

GUITERAS, G. M., Surgeon. Granted four days' leave of absence from August 9, 1910.

HART, GEORGE G., Acting Assistant Surgeon. Granted twelve days' leave of absence from August 18, 1910.

HORNING, HENRY, Acting Assistant Surgeon. Granted seven days' leave of absence from August 3, 1910, under paragraph 210, Service Regulations.

MCLARTY, A. A., Acting Assistant Surgeon. Granted ten days' leave of absence from August 1, 1910.

MOORE, DUNLOP, Passed Assistant Surgeon. Granted fourteen days' leave of absence from August 10, 1910.

MORRIS, G. A., Pharmacist. Granted twenty-three days' leave of absence from September 6, 1910.

NYDEGGER, J. A., Surgeon. Granted three days' leave of absence from August 9, 1910.

ONUF, B., Acting Assistant Surgeon. Granted eight days' leave of absence from August 16, 1910.

RICHTER, H. C., Acting Assistant Surgeon. Granted thirty days' leave of absence from August 1, 1910.

RUSH, JOHN O., Acting Assistant Surgeon. Granted fourteen days' leave of absence from August 10, 1910, with pay, and four weeks' leave of absence from August 24, 1910, without pay.

RYDER, L. W., Pharmacist. Granted one day's leave of absence August 6, 1910, under paragraph 210, Service Regulations.

SAVAGE, WALTER L., Acting Assistant Surgeon. Granted thirty days' leave of absence from August 12, 1910.

SCHWARTZ, LOUIS, Acting Assistant Surgeon. Granted seven days' leave of absence from August 8, 1910, under paragraph 210, Service Regulations.

STEVENSON, J. W., Acting Assistant Surgeon. Leave of absence for thirty days from August 3, 1910, amended to read thirty days from August 8, 1910.

STEWART, W. J. S., Acting Assistant Surgeon. Granted one month's leave of absence without pay from July 23, 1910.

STIMPSON, W. G., Surgeon. Granted twenty days' leave of absence from August 11, 1910.

TOWNSEND, W., Acting Assistant Surgeon. Granted eight days' leave of absence from July 28, 1910.

VOGEL, C. W., Passed Assistant Surgeon. Granted fifteen days' leave of absence from August 10, 1910.

WALLACE, C. R., Acting Assistant Surgeon. Granted fourteen days' leave of absence from August 22, 1910.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending August 13, 1910:

BAKER, FRANK C., Major, Medical Corps. Will proceed at the proper time to the Camp of Instruction at Fort Benjamin Harrison, Indiana, for duty, and upon the completion thereof will return to his proper station.

BERRY, HARRY R., Lieutenant, Medical Corps. Designated for duty at the Camp of Instruction, Fort Benjamin Harrison, Indiana.

BOYER, PERRY L., Captain, Medical Corps. Relieved from temporary duty at Fort Mason, California, and as attending surgeon, San Francisco, California, and upon the expiration of present sick leave of absence will proceed to Fort Clark, Texas, for duty.

BRECHEMIN, LOUIS, Colonel, Medical Corps. Relieved from duty in the Philippines Division, and will proceed on the transport to sail from Manila, P. I., to San Francisco, California. Colonel Brechemin will proceed thence to Omaha, Nebraska, for duty as Chief Surgeon, Department of the Missouri, relieving Colonel William W. Gray, Medical Corps, who will return to his proper station.

Brownlee, Charles Y., Major, Medical Corps. Upon expiration of leave of absence will proceed to Fort Des Moines, Iowa, for duty at that post.

Bundesen, H. N., First Lieutenant, Medical Reserve Corps. Left Fort D. A. Russell, Wyoming, en route to Camp E. S. Otis, Wyoming.

Casper, Joseph, Lieutenant, Medical Corps. Left Fort Du Pont, Delaware, en route to Pine Camp, New York, for duty.

Church, James R., Major, Medical Corps. Relieved from duty at Fort Robinson, Nebraska, and ordered to Fort Ontario, New York, for duty.

Clayton, J. B., Major, Medical Corps. Granted leave of absence for one month and fifteen days, about October 1, 1910.

Collins, C. C., Major, Medical Corps. Upon expiration of present leave of absence will proceed to Fort Robinson, Nebraska, for duty.

Connor, C. H., Major, Medical Corps. Designated for duty at the Camp of Instruction, Fort Benjamin Harrison, Indiana.

Davis, William R., Captain, Medical Corps. Will proceed at the proper time to the Camp of Instruction at Fort Benjamin Harrison, Indiana, for duty, and upon the completion thereof will return to his proper station.

De Krafft, S. Chase, First Lieutenant, Medical Reserve Corps. Relieved from active duty in that Corps, to take effect August 14, 1910.

Fauntleroy, P. C., Major, Medical Corps. Detailed for duty as Inspector-Instructor, organized Militia of Illinois, encampment at Peoria, Illinois.

Ferenbaugh, Thomas L., Lieutenant, Medical Corps. Reports for duty at Camp E. S. Otis, Wyoming.

Geddings, Edward F., Major, Medical Corps. Assigned to duty as Inspector-Instructor at State encampment at Gettysburg, Pa., from August 11 to 20, 1910.

Gibson, Paul W., First Lieutenant, Medical Reserve Corps. Left Fort Yellowstone, Wyoming, on practice march with Troop F, Fifth Cavalry.

Gray, William W., Colonel, Medical Corps. Ordered to proceed to Omaha, Nebraska, and report September 1, 1910, for temporary duty as Chief Surgeon, Department of the Missouri.

Hall, James F., Captain, Medical Corps. Ordered to make the physical examination of captain and lieutenants on duty at Rock Island Arsenal, Illinois.

Hallett, H. J., First Lieutenant, Medical Reserve Corps. Reported at Fort Hamilton, New York, for temporary duty.

Harris, H. I., First Lieutenant, Medical Reserve Corps. Reported for temporary duty at Pine Camp, New York.

Hess, Louis T., Major, Medical Corps. Assigned to duty as Inspector-Instructor at State encampment at Gettysburg, Pa., from August 11 to 20, 1910.

Hughes, Leonard S., First Lieutenant, Medical Reserve Corps. Reports for duty at Camp E. S. Otis, Wyoming.

Kremers, E. D., Lieutenant, Medical Corps. Ordered to proceed from Presidio of San Francisco, California, to Fort Miley, California, for temporary duty.

Lynch, Edward C., First Lieutenant, Medical Reserve Corps. Reports for duty at Camp E. S. Otis, Wyoming.

Maguire, David F., First Lieutenant, Medical Reserve Corps. Left Fort Myer, Virginia, en route to Fort McHenry, Maryland, for temporary duty; reported at Fort McHenry, Maryland, August 11, 1910.

Metcalfe, R. F., Captain, Medical Corps. Upon expiration of leave of absence will proceed to the Army General Hospital, San Francisco, California, for duty.

O'Connor, R. P., Major, Medical Corps. Will proceed at the proper time to the Camp of Instruction at Fort Benjamin Harrison, Indiana, for duty, and upon the completion thereof will return to his proper station.

Owen, Leartus J., Captain, Medical Corps. Designated for duty at the Camp of Instruction, Fort Benjamin Harrison, Indiana.

Register, E. C., First Lieutenant, Medical Reserve Corps. Reported for temporary duty at Fort Michie, New York.

Robbins, Chandler P., Major, Medical Corps. Left Fort McHenry, Maryland, en route to Fort Monroe, Virginia, for temporary duty.

Smart, William, Captain, Medical Corps. Granted two months' leave of absence, about September 7, 1910.

Smith, Allen M., Major, Medical Corps. In addition to his other duties will assume charge of the office of the Chief Surgeon, Department of Texas.

Springwater, Samuel A., First Lieutenant, Medical Reserve Corps. Granted leave of absence to and including September 4, 1910; honorably discharged from the service of the United States, to take effect September 4, 1910, his services being no longer required.

Usher, F. M. C., Major, Medical Corps. Relieved from duty at Jackson Barracks, Missouri, and ordered to Fort Sam Houston, Texas, for duty at that post.

Vedder, Edward B., Captain, Medical Corps. Detailed as a member of board for the purpose of studying tropical diseases as they exist in the Philippine Islands, vice Captain E. D. Kilbourne, Medical Corps, to take effect upon departure of Captain Kilbourne from the Philippine Islands.

Vose, William E., Major, Medical Corps. Relieved from duty at Fort Des Moines, Iowa, and ordered to Jackson Barracks, Louisiana, for duty at that post; orders to duty, Camp of Instruction, Fort Riley, Kansas, revoked.

Waterhouse, S. H., Major, Medical Corps. Assigned to duty as Inspector-Instructor at State encampment at Gettysburg, Pennsylvania, from August 11 to 20, 1910.

Births, Marriages, and Deaths.

Born.

Alfred.—In Newport, Rhode Island, on Tuesday, August 9th, to Surgeon A. R. Alfred, United States Navy, and Mrs. Alfred, a daughter.

Married.

Barnes—Johnson.—In Marion, Indiana, on Thursday, August 4th, Dr. Robert Allison Barnes and Miss Johanna Johnson.

Died.

Detwiler.—In Williamsport, Pennsylvania, on Tuesday, August 9th, Dr. Benjamin H. Detwiler, aged seventy-eight years.

Foley.—In Lexington, Kentucky, on Sunday, August 7th, Dr. William Foley.

Franks.—In Baltimore, on Saturday, August 6th, Dr. George K. Franks, aged sixty-two years.

Hand.—In Norwich, New York, on Tuesday, August 9th, Dr. Stephen M. Hand.

Harper.—In Russellville, Kentucky, on Friday, August 5th, Dr. Chesterfield W. Harper, aged seventy-four years.

Holley.—In Brooklyn, on Sunday, August 7th, Dr. Seymour J. Holley, aged seventy-three years.

Hornblower.—In Allandale, New Jersey, on Sunday, August 7th, Dr. Theodore Hornblower, aged sixty-five years.

Hull.—In Essex, Massachusetts, on Monday, August 8th, Dr. William Henry Hull, aged seventy-eight years.

Jamieson.—In Detroit, Michigan, on Tuesday, August 9th, Dr. Robert A. Jamieson, aged sixty-seven years.

Koester.—In New York, on Sunday, August 7th, Dr. Henry F. Koester, aged forty-seven years.

Krug.—In Philadelphia, on Saturday, August 6th, Dr. J. Adam Krug, aged fifty-four years.

Miller.—In Pittsburgh, Pennsylvania, on Wednesday, August 3d, Dr. William Newlon Miller, aged eighty-four years.

Nance.—In Russellville, Alabama, on Saturday, August 6th, Dr. James W. Nance.

Raudenbush.—In Reading, Pennsylvania, on Wednesday, August 3d, Dr. Abraham Scholl Raudenbush, aged sixty-nine years.

Ridgway.—In Atlantic City, New Jersey, on Friday, August 5th, Dr. William F. Ridgway, aged thirty-eight years.

Scofield.—In Stamford, Connecticut, on Friday, August 5th, Medical Director Walter K. Scofield, United States Navy, retired, aged seventy-one years.

Zudzense.—In Sparta, Michigan, on Wednesday, August 3d, Dr. Benamin J. Zudzense, aged fifty-seven years.

New York Medical Journal

INCORPORATING THE

Philadelphia Medical Journal and The Medical News

A Weekly Review of Medicine, Established 1843.

VOL. XCII, No. 9. NEW YORK, AUGUST 27, 1910. WHOLE No. 1656.

Original Communications.

ORAL PROPHYLAXIS.*

BY L. ASHLEY FAUGHT, D. D. S.,
Philadelphia.

Over twenty years ago, it was my privilege to read a paper before the Pennsylvania State Dental Society, on Oral Hygiene, directing attention to a conclusion which I had then reached, that the preservation of teeth from the ravages of dental caries lay in the care given to the mouth and teeth, by each individual possessor of the set of teeth in question. Two creeds were at that time, before the dental practitioner, viz.: "Failure in operations is mainly due to defective manipulation," and "Failure in operations is mainly due to incompatibility of filling material with tooth bone." I then enunciated as a third creed: "Failure in operations and tooth loss is mainly due to the lack of oral hygiene."

For fifteen years prior to 1887, almost nothing touching upon this subject, had been published. Perhaps the most important reference in dental literature had, prior to this time, been made by Dr. George A. Mills, in 1879. He said "The value of a decided polished surface of the tooth becomes apparent to those who have had the operation performed; the facility with which such teeth can be kept clean is evident; and although this condition may have been secured at considerable expense, yet it is an investment that will pay a good rate of interest. I do not think many dentists have much idea of the beautiful polish that a human tooth will take. Many teeth are capable of a great improvement in this direction which are now a decided detriment to what might otherwise be a pleasing face."

It was not until after such statements that the character of dental studies in this direction changed, and instead of treatments which had previously been given for merely cosmetic effects, every effort subsequently given had a far more reaching intent.

The routine work of the ordinary dental practice is repair or replacement, and even yet, prophylaxis is a half hearted consideration. It is freely conceded that the mouth and teeth should be kept clean, that neglect hurts the teeth and gum, and ultimately, the general health; and patients are yet too frequently dismissed with some general advice about brushes, floss silk, and dentifrices; and as a result, the hygienic care by the patient falls short between visits to the dentist. The object of this address is to awaken both dentist and physician to a more serious view of the great importance of oral prophylaxis.

The physician has already learned the great lesson that it is better to prevent disease than to cure disease, and in almost every direction, his efforts have been lately exercised to this new and important end. The trend of bacteriology has, more and more, added valuable lessons, which even the dentist can no longer ignore.

Miller considered disease as caused by pathogenic bacteria, according to the point of entrance of infection.

1. Infections caused by break in continuity of the mucous membrane by mechanical injuries (wounds),

2. Infections through the medium of gangrenous tooth pulps, and from alveolar abscess.

3. Disturbances occasioned by resorption of poisonous products formed by bacteria.

4. Pulmonary diseases caused by inspiration of particles of slime, small pieces of tartar, etc., containing bacteria.

5. Excessive fermentative process and other complaints of the digestive tract, caused by swallowing of microbes and other poisonous products.

6. Infections of intact soft tissues of the oral and pharyngeal cavities, whose power of resistance has been impaired by debilitating disease, mechanical irritation, etc., considering in this connection also the possibilities of infection by accumulations in the mouth of excitants of diphtheria, typhus, syphilis, and diseases of like nature.

The relation between diseases, both local and systemic, and these avenues of infection, are, when given a moment's thought, so obvious as to seem to require no special consideration; and yet, the close relation between the two is very far from being fully recognized. Not only in general medicine, but in special dental studies of such subjects as amygdalitis, pharyngitis, and stomatitis, discussion is too frequently carried on, without the slightest reference to sepsis within the mouth as a possible source of infection.

Dentists are concerned principally with two diseases, dental caries, and oral pyorrhœa.

Dental caries is caused by lactic acid organisms. Careful study has shown that to produce the disease, it is necessary for these organisms to attach themselves to the surface of the tooth, and then protect themselves by a membrane known as the placque.

Miller made an exhaustive study of the saliva and found no difference in immunes and susceptibles, other than that in immunes there was a small per-

*Read at a joint meeting of the Philadelphia County Medical Society and the Stomatological Club of Philadelphia.

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centage of potassium sulphocyanide. Michaels points out an interesting relation between the proportion of ammonia salts and sulphocyanides: In lowered acid states, ammonia is greater than sulphocyanides, and dental caries rapid; in healthy states, an equality between the two. In excessively acid states, sulphocyanides in greater proportion than ammonia, with immunity or dental caries of slow process. Black has expressed the opinion that sulphocyanides prevented the formation of placques, and that the activity of the bacteria depended upon the formation of this membrane. If we prevent the attachment, we prevent decay. So much for the cause of this one great disease—dental caries.

I shall purposely refrain from presenting to you, at this time, any study of the causes leading to the other disease referred to, as another essayist present will shortly fully deal with it.

Gingivitis and stomatitis are conditions commonly associated with dental caries. They occur in every degree of intensity, from the slightest redness (gingivitis) around the necks of teeth, to the most general stomatitis, affecting the mucous membrane of the whole mouth, gum, cheeks, palate, and pharynx. However marked and extensive this stomatitis, it causes no pain nor local discomfort. The symptoms are a foul taste in the mouth, especially in the morning, a distaste for food, and occasionally, salivation. The patient seeks the physician for indigestion. The local conditions, if noticed at all, are then regarded as the effects of the systemic condition, rather than a prompt recognition made that systemic conditions are the result of such local causes.

Stomatitis, so common in children, is ascribed to errors in diet, decomposing and indigestible food, uncleanliness of feeding vessels; and in case of adults, to the use of tobacco, stimulant food, and drinks. Every factor is taken into consideration, except the possible local septic origin of the condition. Too much stress cannot be laid on the importance of observing the teeth from a medical standpoint.

One of the most common pyogenic infections in the mouth is amygdalitis. The tonsils, when weakened in resisting power, by the numerous factors frequently ascribed as causing amygdalitis, become ready to receive infection from septic conditions adjacent to the tonsils themselves, and carious teeth furnish this source of infection.

Pharyngitis, septic gastritis, might also be instanced as diseases frequently influenced, if not actually caused, by mouth conditions, particularly by carious teeth, for the septic absorption from such teeth and gum must be very considerable, frequently lasting, as it does, over many years. If pus organisms are constantly being swallowed, there is a risk of their infecting the tissues over which they must pass, and even infections of the Eustachian tube may, from time to time, occur.

Even apart from such local infections, there must always be a certain risk connected with the absorption into the blood of organisms from diseased gum and teeth, and if other conditions are favorable, there may be infection from the blood. Every care is taken, in increasing degree, to protect the patient from the very obvious disease producing organisms, such as typhoid or tubercle bacilli by attention to the air breathed, the water and food taken; by the utmost habits of cleanliness; and by stringent surgical precautions. The mouth alone, seems to be disregarded, and yet it is a very hotbed of infection.

Professor Daland has said:—"Morbid conditions of the teeth, mouth, oropharynx, nose, and sinuses connected therewith, in their relation to the production of indol, possess an importance which is far too little recognized. Not infrequently the buccal cavity contains much decomposing material, together with many microorganisms, both fermentative and putrefactive. The odor often suggests decomposition, and examination may reveal abscess of the gums, pyorrhœa alveolaris, with soft, flabby, congested, and contracted gums, forming numerous cavities, in which pus and food may be retained under conditions peculiarly favorable to decomposition. A similar condition may arise from the long continued presence of food between the teeth, especially when there is irregular dentition or caries. Occasionally in the enlarged crypts of diseased tonsils decomposing cheesy material may be found and suppurative rhinitis or sinusitis is not uncommon. When such conditions of the oropharynx, nose, or sinuses exist it is manifest that food, even during mastication and before deglutition, may become infected and putrefaction begin."

In influenza the disturbances of the mucous membrane of the mouth, are almost pathognomic. If this disease is to be averted, for the germs enter through the mouth, the treatment requires a thorough and continued sterilization of the mouth, systematic cleaning of the teeth, and the removal of the thick coating from the dorsum of the tongue. Chronic headaches, uræmia, anæmia, neurasthenia, malaise, constipation, and dizziness, have all been helped, and many cases cured by oral prophylaxis. Sir Frederick Treves, surgeon to the late King Edward, is quoted as having said, "Patients suffering from appendicitis generally have poor molars. The unfitness of teeth for mastication seems to bear a direct causative relation to disease of the appendix." Osler is quoted as saving, "More deaths in the United States are caused directly by unhealthy mouths than by alcohol." William Hunter says, "The local manifestations of septic conditions in the mouth are very various. They include a whole series of local inflammatory and suppurative conditions."

In the mouth—dental caries in all cases; gingivitis and stomatitis, in every degree of intensity, inflammatory, pustular, ulcerative, sloughing, and gangrenous; periostitis; pyorrhœa alveolaris; depositions of tartar. In the jaws—periostitis, alveolar abscess, osteitis, osteomyelitis, necrosis, maxillary abscess. In parts adjacent to the mouth—amygdalitis, pharyngitis, otitis, glandular enlargements, cellulitis, postpharyngeal abscess; in rarer cases—thrombosis of veins, ethmoidal suppuration, and meningitis by direct extension.

Miller has demonstrated that in unclean mouths the cultivatable bacteria are legion. Professor Arkovy, of Budapest, reports from minute study of cases, that the *Bacillus gangrœnæ pulpæ*, as compared with other organisms, was found in 95.3 per cent. of cases; *Staphylococcus pyogenes aureus*,

34.8 per cent.; *Streptococcus pyogenes*, 23.2 per cent.; *Staphylococcus pyogenes albus*, 18.6 per cent.; *Bacillus pyocyaneus*, 9.3 per cent.; *Staphylococcus pyogenes citreus*, 4.6 per cent. It would be possible to go on indefinitely, recalling to your minds the existing conditions in the human mouth, and suggesting the thought of the possible influence of such conditions, both locally and systemically; but I will refrain from such infliction, and content myself by referring only to a few further conditions, which are recognized by dentists in daily practice.

In the work of replacement, with which the dentist is so much concerned, it is highly important that, as far as possible, metallic or porcelain materials should have preference; that all breaks in the continuity of tooth tissue should be repaired, crevices, in the out of the way places, should be filled so as to present smooth surfaces; all roughened surfaces, either of teeth or fillings, should be made smooth and even; and gutta percha, in particular, used as little as compatible with the saving of the teeth.

This is the age of crown and bridge work, and I regret to say, that in my estimation, fully ninety per cent. of this work is improperly done. The great reason for this is, that it is considered as mechanical rather than operative dentistry, and constructed upon models in the laboratory. The crown bands, to be clean, require to be fitted, in every instance, to the tooth in the mouth, and this portion of such service should be done at the chair. Again, the cement with which these replacements are attached, is verily the rock of offense. Excess of this material, and careless protrusion of it under ill fitting bands, often making, in addition, pressure upon gum tissue, will provide splendid avenues for localization of bacteria. Indeed, it is a great question, whether, instead of ninety per cent. of this class of service being improperly done, ninety per cent. of it should ever be placed in mouths at all, for there are many other possible evils than that concerned with the surplus cement question, which such pieces produce. When a bridge is removed, for any purpose, it is found that the malodorous condition presented, is located usually only in the body of the old adherent cement.

Artificial replacement, not made by crowns and bridges, is made by plates carrying either partial or whole dentures. Here, oral prophylaxis speaks with no uncertain voice against the use of the rubber or vulcanite base. The porosity of the material is decidedly an objectionable feature, rendering it, when worn for any great length of time, exceedingly foul. The fact that it is a vegetable compound, and non-conducting of the variations of heat and cold, makes it soon produce a deleterious congestion of the tissues covered by it, altering the physiological action of the mucous follicles, and producing unhealthy secretions.

When metal is used as a base in constructing artificial dentures, the teeth, unless standing singly, should not be attached by the old methods of soldering. Nothing can be conceived of as more unhealthy than the old fashioned full soldered denture.

The causes producing disease in the mouth, lie not entirely in faulty replacement work—for a mouth devoid of such influences may, from faulty occlusion of the teeth, and from other influences established by irregular arrangement of the natural organs, be thrown out of physiological harmony.

Oral prophylaxis emphasizes the importance of the services of the orthodontist. Whenever possible, the correct alignment and occlusion of all the teeth is imperatively demanded. Orthodontia is decidedly a prophylactic measure. Very few mouths exist with the ideal arrangement of teeth, more often, with improper alignment and occlusal interference. Teeth bunched together in irregular arrangement, with undesirable crevices and spaces, favorable to the retention of particles of food. These particles, unremoved, are inimical to a healthy mouth, for they decompose, forming compounds exceedingly detrimental, and hidden away in these out of the way spaces, they are rarely disturbed in the ordinary cleansing of the mouth.

The pathological states of the mouth have been classified as follows:—

Pericemental alveolar inflammations. Gum inflammation; alveolar absorption; pyorrhœa; stomatitis; pericemental abscess.

Dental caries. Decalcification of dentine; pulp exposure; alveolar abscess.

Impeded alveolar development. Alveolar deformities; crowded and irregular teeth.

It is impossible, in the confines of a paper such as this, to specialize upon all the methods of treatment involved by such outline. Each state of disease, however, when occurring, requires intelligent treatment, if the desire is to bring the mouth to the standard which shall give the highest physiological functioning. It is to the great credit of present day dentistry, that the dentist is abundantly informed and able to accomplish this desirable object. The important fact to grasp is, that in one and all, the condition is that of sepsis. Physicians, dentists, and patients alike, need to be more fully alive to this great truth. The field is wide for the practice of oral prophylaxis.

Much has been done to devise means for destroying the microorganisms found in the mouth. Innumerable washes have been advised and used, but only with small success have they accomplished the results desired. At last it is realized that it is not possible to sterilize the mouth, and efforts now are concentrated upon taking away the pabulum upon which the germ life thrives. The thorough removal of their food, is now the great thought around which oral prophylaxis is centered.

It only remains, therefore, for the present paper to consider treatment along very general lines. Such treatment, naturally divides into that which can be given *only* by the dentist, and that which will be within the province of the patient.

It has long been recognized that mouth breathers are more in danger of infectious diseases than are nasal breathers. Patients should therefore be instructed to cultivate and maintain breathing through the nose, and to keep the mouth shut. Besides cutting off infection, there is a beneficial influence on the proper development of the bony portion of the anatomy of the mouth and face. An influence of great import, and one not to be disregarded with impunity. Patients should also be instructed to develop deep lung breathing. Thorough oxygenation of the blood carries with it desirable influences upon

nutrition. Without it, we have impaired nutrition and lowered vitality, producing a long train of pathological sequences, which are not without exhibition in the oral cavity.

Patients need to be instructed as to the importance of the active use of the teeth; that they are the organs of mastication and should be so used; that use means health. Even the little temporary teeth should have plenty of exercise. In addition to the increase of strength which comes to the teeth from vigorous use, they are benefited by the external polish which they acquire from the rubbing of tough food against their surfaces. Besides benefitting the teeth and jaws, mastication stimulates the glands of the mouth. Sluggish glands bring forth unhealthy secretions. Indeed, the influence is all along the entire digestive tract, producing physical conditions of health, which profoundly influence the condition of the teeth.

In as much as one of the great causes of that universal disease, dental caries, is lack of cleanliness; and since it is known that decay begins at the outer surface of the tooth, and most frequently, at the very points most difficult to keep clean, the patient should be taught, and fully appreciate, that eternal vigilance is the price of teeth.

My experience is that patients are not alive to the demands of the hour, realizing the more difficult a thing is to do, usually the more important it is that it should be done. No excuse of difficulty should be presented to the dentist, or accepted by themselves, for neglect of this one duty of the patient. It is the duty of the patient to clean the teeth, not the service of the dentist. Dentists do not clean teeth. Such services, so called, are entirely misunderstood. The dentist gives prophylactic treatments, which have vastly more involved than the incidental result of leaving the teeth clean. Prophylaxis is combatting germ growth, and the combat requires the removal of deposits, bacterial accumulations, and inspissated mucus. The eradication of the food area, making germ growth impossible, by removing one of the essential conditions for their existence at all. The heat and moisture must continue in the oral cavity; but the proper food for germ life need not. It is of vital importance that the patient so cleans a mouth thus treated, as to prevent new replacement of such necessary element to germ life; or, at least, not to allow of anything approaching a rapid return of food supply.

To accomplish this cleansing, the effort on the part of the patient should not be spasmodic; but thorough, frequent, and diligent. The teeth should be brushed on the lingual and palatal surfaces, as well as on the buccal and labial sides, with a rotary motion to the brush, brushing the gum as well as the teeth, from the gum toward the crowns of the teeth, not with a rotary motion in that direction, and then in the reverse direction, but with a movement which shall be peculiarly always in the one direction only; the direction of tooth growth, the motion to follow the axis of the tooth, giving particular attention to the inside of the lower arch in the molar region. Great care should be taken to reach all the surfaces of the teeth situated well back in the rear of the mouth. The teeth should also be brushed backward and forward on the occlusal or chewing surfaces. From time to time, during the brushing, the mouth is to be rinsed with an antiseptic solution, to wash away and eliminate the dislodged particles. Waxed floss silk is also to be used by passing it between the teeth, with a sliding motion, from side to side, holding it firmly upon the approximal surfaces, to assist in polishing away any attached mucus. This attention, after each meal and at night, before retiring, should be sedulously given. It can be most intelligently accomplished in front of a mirror. The teeth should also be brushed just before meals, to eliminate any germ life, and to prevent its being swept down into the alimentary tract, for it has been scientifically recorded that germ life is at its minimum just after eating. The tongue should also be carefully brushed. Massage, under the instruction of a dentist, may also be employed by the patient with great benefit to the many local, pathological states. So, also, the use of an atomizer, filled with appropriate solutions, is often advisable, spraying the material with force into the interstices between the teeth. By this simple procedure in the hands of patients, may be secured, in large measure, tooth health and tooth salvation, but few are enough in earnest about the preservation of their own teeth to give this care as it should be given.

Patients should report frequently, and at very near intervals, to the dentist for prophylactic treatment at his hands. Undoubted testimony has frequently been offered of the immense benefit of such proceeding, to say nothing of the stimulating effect, which mere surveillance has upon the efforts of the patient to properly care for the mouth and teeth, between such visits. The work of the patient is to maintain the oral cavity in a state of health, and the service of the dentist is oral prophylaxis—the placing of the teeth in condition to prevent disease. How can the dentist best accomplish this service? By making a thorough examination of all conditions, and by suggestion to patients of ways and means, specially fitted to the requirements in each case. By giving such treatment as will inhibit incipient decalcification of tooth structure, which can often be accomplished by local application of nitrate of silver. By forcibly changing the environment of all the teeth through the process of scaling and polishing. The scaling is to be accomplished by the use of instruments adapted to remove from the teeth, all calcarious and other deposits. This procedure requires great patience and a cultivated tactile sense. But it must be thoroughly accomplished to be of real service. Any half way measures spell failure. Each tooth must be as free of material clinging to it, as when it first emerged into the mouth from its bony crypt. The polishing is best accomplished by the use of wooden points, with fine pumice powder. The surface of each tooth must be polished with force, for not of least importance is the stimulation given to the alveolar dental membrane, by the operation of such forceful action. The approximal surfaces may be reached by a broad band of waxed floss silk, which is also to be armed with the pumice powder. Any oversensitive surfaces are to be treated by use of a saturate solution of tannic acid in glycerin, rubbed into them by the points of orange

wood. This treatment, here outlined, can only be given by the dentist, and should be received by the patient at intervals of a month or two.

In conclusion, it may be said, that by the careful application of the principles of oral prophylaxis, it is possible to avoid much of the surgical interference, which in past experience, the teeth seem to have required, and the changed conditions of the oral cavity, will prove of immense benefit to the general health of the patient.

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HYPOTHYREOIDISM.

*A Commonly Overlooked Disease.**

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Hypothyreoidism, deficient thyreoid secretion, may be so mild as to cause a few pains and aches, or so severe as to render the victim a bedridden neurasthenic invalid; ugly, perhaps, and miserable; and often a complete puzzle for the medical attendant. Not always is the patient myxœdematous. He or she may be so far advanced in the disease that the atrophic form obtains with emaciation and cachexia, so extreme that no subcuticle tissues, save bones and muscles, remain. Or the disease may be so slight that barely no skin changes are apparent, as in the cases reported herewith. In fact, the patient may be rather fair to look upon and yet have so many nervous symptoms as to be miserably ill, and in the eyes of many doctors a nervous, rheumatic crank.

I have seen in all nine cases, in private practice. One patient was so myxœdematous that she and her family preferred that she should not appear in public places, because she attracted the attention of nearly everybody by her hippopotamus gait. Two other patients were merely fat looking with puffy faces and swollen eyelids; one was a cachectic, prematurely old, and withered looking woman invalided for years, in whom there was but little suggestion of myxœdema; two were comely, handsome women, one thirty-five and the other fifty-three years of age, another a thin, nervous little woman, a familiar type, with many ills and no myxœdema. All had several things in common. All had had children. All had joint pains that were called rheumatism. The fat ones were all thought to have Bright's disease, the thin ones nervous prostration. And all without exception had had a galaxy of doctors who had misdiagnosticated their ills. I made this mistake in several cases.

Any woman approaching middle life or in the fourth decade, who has had a history of backache, an occipital headache, together with joint pains, dyspnœa, asthenia, should be suspected of having hypothyreoidism, especially so if she has amenorrhœa or had had it during the menstrual life.

The symptom most commonly complained of, and that bitterly, is the occipital headache, which is present often, a great deal of the time, also giving way of the knees, dyspnœa, subnormal temperature. Amenorrhœa, distressed countenance follow next, and the whole regiment of ills that render miserable the lives of those afflicted so that their families are open in wishing that they were freed from misery by death.

Hypothyreoidism is a disease of many symptoms; some are as pronounced and so significant that one is compelled to think that the disease cannot be anything but thyreoid deficiency, but again the symptom complex may be so vague and indefinite that one is forced to say to himself, "I will try a little thyreoid extract and see what will result." It is again a disease for the general practitioner to treat; its manifestations are so widely divergent, that one has to be at once familar with neurological and gynæcological practice, as well with diseases of the ear. Many of my patients had seen specialists, some for their dyspnœa, some for their hearing, and some for their amenorrhœa. All had taken sodium salicylate, some had been treated at Hot Springs. Many obtained relief by massage. Two women, one all but deaf, the other miserable from tinnitus, had their hearing restored so that it was all but perfect merely by taking thyreoid extract. From the dermatologist to the heart specialist they had wandered, leaving only the general surgeon alone.

It is as often misdiagnosticated as rheumatism. In this disease the crime of persistent and wilful misdiagnosis renders the word rheumatism the opprobrium of the profession. I have found in a moderate family practice that it is much more frequently met with than either locomotor ataxia or exophthalmic goitre.

Perhaps nowhere in all medicine is the treatment more directly specific, more fruitful of results, and fraught with less discomfort or even danger than in this disorder.

As to its ætiology we know very little more than we did ten years ago. All of my patients have been women, and all have borne at least one child. It has been hinted by a recent writer that perhaps the thyreoid fibrosis and atrophy are the result of congenital syphilis. It is probably due to some over stimulation and exhaustion of the thyreoid in pregnancy, and yet men are sometimes victims of the disease.

How the thyreoid secretion acts on the human metabolism we do not know. It may be that its action is akin to a catalytic one, in that its mere presence causes chemical unions to take place, between substances that otherwise would not unite, as the familiar action of copper salt in the manufacture of mineral acid.

It is quite apparent that the administration of thyreoid causes an enormous increase in the nitrogen output of the body. It is also patent to all that hypothyreoidism is a condition of profound malnutrition or under "paranutrition" of the nervous system, if it is proper to coin such a term.

As said in a previous article, this disease should be classed among nervous diseases and not among those of the ductless glands as it so often is, chiefly because most of the symptoms are nervous, and because the practitioner would more easily recognize it. That it is common is only too true, it is more than probable that most men of a fair sized clientèle have one, two, or three middle aged, fat women who have

*Read before the Section in General Medicine of the Philadelphia College of Physicians.

headaches, are despondent, rheumatic, neurasthenic, upon whom the whole battery of the pharmacopœia and proprietary battalion as well, have been fired unavailingly until the patient is worn out and despairs of ever being well again. All save thyreoid extract, which is as good for pains of the hypothyreoidics as is sodium salicylate for the "truly rheumatics." Massage relieves many of their symptoms temporarily, and if their means afford it they frequently resort to it and persist in its employment.

In none of the four following cases were any myxœdematous symptoms present in any marked degree, and yet the patients suffered from this malady of deficient thyreoid secretion, and I say this advisedly, because one was a very large woman of 250 pounds, one was a little woman of ninety-eight pounds, and another a comely little plump woman with clear ruddy complexion who weighed 153 pounds.

Case I. The latter case, Mrs. H., æt. thirty-five, was sent to me by an ear specialist to see if there could be any systemic cause for her deafness. I found her as previously described, a comely woman, very deaf, and with rather dull perceptions. She gave a good history as to her family. She had had typhoid fever and rheumatism. She had been married twice; by her first husband she had had four children in three births. All of the children were dead, but no history of them could be obtained. Her present history was that she was nearly totally deaf and suffered much from all the curious auditory phenomena that afflict those with tinnitus. She had backache, headache, dull perceptions, poor memory, her limbs trembled, tongue was thick and clumsy. Her ankles were weak and she had rheumatic pains in her hands and feet on rising in the morning. She slept well after going to sleep in her chair. She had the characteristic occipital headaches. She was depressed at times, cried, and could not recall names or dates. She had hallucinations of sight and suffered from cold in summer as well as in winter. Hands were clumsy and her gait stiff. She had a "crick" in her larynx. Most of these symptoms were nervous in origin. She did not perspire, her voice was husky, digestion poor, and she was as usual constipated. She was dyspnœic, menstruation was scanty and irregular, about every three months. It was absent for nine months, probably premature climacteric.

Physical examination showed rather rough skin, reddish over each cheek; she had dandruff, and the outer half of each eyebrow was characteristically thinner than the inner. Skin on feet and hands hard and yellow and scaly. Supraclavicular pads, fairly marked, no pads of myxœdematous tissue elsewhere. Eyelids slightly puffed. Drumheads sclerotic retracted. Joints crepitated on flexing. Thyreoid not palpable. Heart weak, no murmurs, slightly enlarged. Temperature subnormal (96.5° F.). Lungs normal. Abdomen slightly pendulous. Uterus and ovaries normal. Reflexes and pupils normal. Blood pressure, 110 m.m. Hg. systolic; blood showed hæmoglobin, 63, and anisocytosis. The latter I find is an early and characteristic sign in all cases. No nucleated or stippled red blood corpuscles were seen. Differential count about the usual ratio.

How to correlate this collection of bewildering symptoms other than by thyreoid deficiency would be impossible. Under thyreoid extract treatment her hearing became practically normal, her headaches disappeared, her depression vanished, her temperature became normal. In every way she is well save in that she still has amenorrhœa (premature menopause), and is sterile much to her disappointment. Two grains of thyreoid and 1/40 grain arsenic, three time a day for four months, accomplished everything for her. Her husband told her after she was well that "she had no idea what he had put up with, she had been such a dummy." She had lost twenty-one pounds in this time. Her hair, as is usual, came out abundantly, but a new crop speedily supplanted the old and more luxuriantly. She is still somewhat anæmic.

Case II. Mrs. R., wife of a letter carrier, came to my office with the statement that she was tired of doctoring but still needed relief from an intractable headache and backache.

She was a thin little woman of ninety-eight pounds, with three children; she was thirty-four years of age, and said that her father died of tuberculosis and mother was living. She had had scarlet fever and diphtheria; she began to menstruate at fourteen, and it was always scanty. She had had her coccyx removed but was no better from the coccyxicidynea.

She now had, besides her backache and headache, substernal distress, hyperæsthesia of the chest, she often was depressed, at times she cried all day, especially at her menstrual epoch. Slept well but always awakened with headache over the left eye. Pain at times over the præcordium. Her hands were clumsy and stiff in the mornings. Her voice was husky, and at times there was a "crick" in her larynx. She had no ear symptoms. Heart and lungs were normal, pulse 100, pressure low, systolic 112 mm., diastolic 95 mm. She had a marked gastroptosis and excessive acidity which, no doubt, contributed to her headache and backache. Her joints creaked on moving them. Urine was normal, blood showed the early sign which I have noted in all these cases—namely, anisocytosis. Save for her headaches and mental depression I found her nervous system normal. Reflexes and pupils were about normal. After eight weeks' treatment her symptoms were much ameliorated.

Case III. Mrs. S., æt. forty-eight, mother of two children, consulted me for mental depression, dyspnœa, incessant backache and headache. From her family history nothing of any moment was obtained. Her personal history was that of a healthy childhood and adolesence with no history at any time of any serious infection or derangement of any important organ, save menorrhagia which was relieved by curettement, also a mild attack of appendicitis. She was a very large woman weighing 250 pounds. Her breathing was quite dyspnœic and puffy, more so than is usual for very fat people.

She complained of being tired all of the time, of dyspnœa on exertion; backache, angenoid pains under left breast, stiff feet and hands on rising in the morning, of painful stiff creaking knees, weak ankles, occipital headache, insomnia, vague apprehensive nervousness. She had indigestion, was constipated and had a husky voice. Her heart was found to be enlarged, apex beat feeble, pulse small but pressure 145 mm. Hg. Urine normal in every way; blood normal; temperature subnormal. From her weak, painful joints, occipital headache, backache, and mental depression, I assumed that she was suffering from hypothyreoidism. Her skin was smooth, soft, moist, nor was there any true myxœdema anywhere, her eyes and ears were normal. In the absence of a weak pulse and other symptoms I felt that she had thyreoid deficiency. I accordingly gave her one grain of extract of thyreoid with digitalin and arsenic. After six weeks her depression, backache, and other symptoms disappeared save for a weak, painful knee, which was probably the seat of synovitis, otherwise she was well.

All three patients suffered for a while with marked muscular pains in the shoulders after taking the thyreoid extract, also, when the dose was too large, from tremor, fever, flushed face, and rapid pulse. This is quite characteristic of thyreoidism. The improvement in the hearing of the first case, the mental depression in all of these cases, and the relief of pain was most marked in all.

Case IV. L. A., nurse girl, aged thirty. When called to attend her at various times for common complaints, I always was impressed with her inordinately weak heart and insomnia. She was a large, fat woman, five feet three inches tall, and weighing 171 pounds. Beyond this and a puffy condition of her upper eyelids there was nothing to suggest hypothyreoidism in her, and I must confess to a long period of attendance every now and then without suspecting the true primary cause of many of her ills. She had always for years been a sufferer from the characteristic occipital headaches which were not only severe but were intractable. I have noted that in all headaches from this cause the aniline derivatives are very ill borne by this class of patients.

This woman gave a history that was unimportant, save

that her family was healthy, and that she had had typhoid, diphtheria, and amygdalitis when young, and a short, severe attack of laryngitis. Her menstrual history was that she began when fifteen years old, and the flow was regular but always scanty, never lasting longer than three days. She was mother of one child.

The most striking symptoms from which she suffered were her headaches, insomnia, dyspnœa, and asthenia.

Physical examination showed a large woman of smooth skin, abundant hair. Her skin was not myxœdematous nor scaly. She did not have dandruff. Her nails were thin, cracked, and were very brittle. Her upper eyelids were puffy especially in the morning and the singular thinning of the hair in the outer half of the eyebrows was present. She did not perspire even in hot weather save in the axillæ, she never felt inordinately cold. Her digestive tract was normal, her tongue was not thick nor clumsy. Her lungs were normal, as was her larynx, but she once suffered from a violent attack of laryngitis that nearly suffocated her, beyond this her respiratory tract was normal. Her heart examination showed a weak organ dilated but with no marked valve lesions. Her pulse was rapid and weak, and this and her weak knees compelled her to walk slowly especially in ascending stairs. Her urine was normal. Her nervous system was normal as to gross symptom, save the headaches. Her memory was good, concentration prompt and accurate. She never had backache nor any hallucinations of sight or hearing. Her reflexes and pupils were normal in every way. But whenever ill her insomnia was marked. She always had a slight tremor intentional in character. Her knees creaked and crepitated when flexed, but there was no history of any rheumatoid pains, stiff joints and hands. Her temperature generally was subnormal. Blood examination showed the characteristic nutritional changes, found in most cases, anisocytosis was present. Differential count, polymorphonuclears, 48 per cent.; lymphocytes, 48 per cent.; eosinophiles, 4 per cent.

Under 2 grains of thyreoid extract three times a day, her headaches disappeared, her dyspnœa became very much less. She is well save for a slight puffiness of her eyelids. Her weight loss was twenty-two pounds in seven months, she is now able to work easier, and is very much better in every way. She still has to take her thyreoid extract to supply the deficiency. Her sleep, she tells me, is more refreshing, and is undisturbed by nervous startings as it was previously.

Two of the cases reported, exhibited the rarer symptoms of this disease, one was the premature menopause and the other the synovitis of the knee.

In this disease of many symptoms, the widely divergent and multitudinous ills are more characteristic even than any single cares, such as the headache, weak knees, and dyspnœa, that I have dwelt so much upon. All are neurasthenic, and the elaboration of the histories of such cases, and the relief by thyreoid is another prop to support the doctrine that neurasthenia is very rarely a primary disease.

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A CRITICAL ANALYSIS OF ONE HUNDRED AND EIGHTY CASES OF ACUTE INTRAPERITONEAL INFECTIONS.

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The study upon which this paper is based was originally undertaken as a critical analysis of the results obtained by my associate, Dr. C. G. McMullen, and myself, in the cases of acute intraperitoneal infection, which have been treated by us during the past two years. Primarily this has been a critical study, undertaken with the idea of discovering our mistakes, in order that we may be able as far as possible, to avoid the occurrence of similar errors in the future. Therefore, our failures and their causes, as far as we have been able to ascertain them, will receive more than the usual amount of attention in this paper.

During the period under consideration, we have handled all cases of acute intraperitoneal infection according to a definitely systematized plan of treatment, the fundamental objects of which may be summarized under the following heads: 1. The removal of the infection; 2, the removal of the source of infection; 3, the limitation of the spread of infection; 4, the reduction of the absorption of the toxines from the area of infection; 5, the preservation of the patient's natural powers of resistance; and, 6, the removal of toxic material from the stomach by gastric lavage, when necessary.

1. *The removal of the infection.* This is the ideal therapeutic measure, and were it possible to always effectually remove the infection by operative procedures, the treatment of intraperitoneal infections would resolve itself into a simple question of operative technique. There can be no question of the possibility of completely removing the infection in cases of appendicitis, seen while the infection is still confined to the appendix. Likewise, it is possible to accomplish this in many cases of pyosalpinx and empyema of the gallbladder. But experience has very definitely shown that in late appendix operations and in salpingitis and empyema of the gallbladder, the operator is usually compelled to leave behind an infected field, the management of which is of vital importance.

In our own work, we have made it a rule to operate at once when we believed the infection to be still confined to an offending organ which could be removed. We have also operated at once in most cases when we have felt reasonably certain that the peritoneal infection was less than from twenty-four to thirty-six hours old.

2. *The removal of the source of the infection.* This is absolutely essential in cases of gross perforation of the stomach or intestines, because in such lesion the constantly increasing mass of infective material escaping into the peritoneal cavity makes the limitation of the area of infection by natural processes practically impossible. Murphy and many others have shown how satisfactory the results may be in this class of cases, provided only that the leak be closed during the early stages of the peritoneal infection and a postoperative régime be adopted, whereby the peritonæum is given the best possible chance to take care of the remaining infection. It is a fact, however, that even as regards the therapeutic possibilities to be derived from removing the source of infection, we must recognize certain very definite limitations. Thus, after the full development of the peritoneal infection, the removal of an infected organ, or even the closure of an intestinal perforation does not in itself produce a cure, for here again the management of the secondarily infected peritonæum remains the most important factor in the treatment. In our own practice, we have made it a rule to operate at once in all cases of intestinal perforation, and, as before stated, have made it a rule to remove the offending organ when we are reasonably sure

that the peritoneal infection has not existed more than from twenty-four to thirty-six hours. For reasons which will be given later, the nonperforating cases with peritoneal infection which had existed more than thirty-six hours were not, as a rule, operated in during the acute stage of the infection.

3. *The limitation of the spread of the infection.* Only a few years ago, surgeons were wont to look upon the peritonæum as one vast, smooth surface over which pyogenic organisms would almost invariably spread, once they had gained access to the cavity, and there can be no questioning the fact that the peritonæum offers, under certain conditions, almost ideal opportunities for the very rapid distribution of infective material. However, as we have come to know more of the behavior of the peritonæum, when invaded by microorganisms, we have learned that, if only certain unfavorable conditions be eliminated, the peritonæum with its ally, the omentum, is abundantly able to confine within narrow limits the vast majority of intraperitoneal infections.

What I want to especially emphasize in this connection is the fact that the distribution of an intraperitoneal infection is, for the most part, dependent upon purely mechanical factors, and that in the absence of peristaltic movements such as are produced by giving food or cathartics by mouth, the tendency of a localized peritonitis to spread beyond its original boundaries is very slight indeed, while, when a condition of peritoneal rest is once obtained, the vast majority of cases of even extensive and severe peritonitis show a rapid localization of the inflammatory process, which either subsides entirely or ends in the formation of a localized abscess. Practically, this condition of peritoneal rest is obtained by prohibiting all foods and cathartics by mouth, while at the same time, the thirst is alleviated by the use of normal salt enemata, and the pain and restlessness by the use of morphine. Although this method of treatment has gained its chief renown in connection with the treatment of certain stages of appendicitis as advocated by Ochsner, the fact must not be lost sight of that its results are equally brilliant in all cases of acute intraperitoneal infection, except possibly the frank perforations of the stomach or intestines. Not only have we used this plan of treatment in all cases not immediately operated in, but we have used it as a routine postoperative treatment in all cases, whether operated in early or late, continuing the same for from forty-eight to seventy-two hours after the operation, or until sufficient time has elapsed for the walling off of drainage tracts and the closure of any fresh areas of infection which might have resulted from the operative manipulations. In this respect, there is no essential difference between the postoperative treatment as used in early diffuse peritonitis by Murphy and the Ochsner treatment when applied to postoperative cases. The essential thing is that the peritoneal surfaces are allowed to remain at rest.

In addition to the prohibition of food and cathartics by mouth and the use of enemata of normal salt solution, we have kept all patients in the Fowler position and have used every precaution to keep the patient quiet in bed. We have never hesitated to use morphine in sufficient quantity to allay the pain and restlessness.

Under this same heading may be mentioned the avoidance of the spread of the infection during the operative work itself. We have attempted to accomplish this as follows: *Firstly,* by protecting all unsoiled surfaces with gauze pads during the operation. *Secondly,* by limiting the operating manipulations to the simplest possible procedures, always trying to leave the natural barriers, such as limiting adhesions and granulating surfaces, as far as possible undisturbed. And, *thirdly,* we have uniformily refrained from operating during the acute period of the inflammatory process when we believed that the pathological conditions were such that operative interference could not be undertaken without more or less danger of spreading the infection. Manipulations conducted in an infected area during the acute stage of an inflammatory process often accomplish little except the spread of virulent bacteria and their toxines at a time when the body is least able to take care of such additional burdens. However, after the subsidence of the acute process, conditions become vastly changed, for by this time, not only are the technical operative difficulties much less as a rule, but the individual is now largely immune to the less virulent organisms persisting in the infected area, so that there is very little danger of spreading the infection at this later period.

4. *The reduction of the absorption of toxines from the area of infection.* The more alarming clinical manifestations of all infections are due largely to the absorption of the bacterial toxines into the general circulation and just in so far as this absorption can be lessened, do we improve the condition of the patient and lessen the dangers of the infection. In practice this can be accomplished in two ways: *Firstly,* by the reversal of the direction of the flow of the lymph streams, so that the toxines are carried, not from the site of the infection into the blood stream, but away from it. This is the chief result accomplished by drainage, and the beneficial effects of efficient drainage, when this can be obtained are known to all. *Secondly,* we can lessen the toxæmia by the production of a stasis of the lymph streams so that the toxines are no longer carried from the area of infection into the general circulation, but remain confined within the area of infection. To accomplish this latter object, the one great therapeutic measure at our command is rest. There can be no doubt but that in the recent area of radical surgery with its far too frequent attempts to drain under most unfavorable conditions, we have very often lost sight of the fact that the inflammatory processes themselves will very effectually confine the toxines, provided we do not constantly pump the poisons by mechanical means beyond the confines of the inflammatory barriers. For practical purposes we may liken an inflammatory area to a sponge filled with highly toxic material which nature is trying to incapsulate by a zone of infiltration. If the sponge is kept absolutely quiet, the toxic fluids remain in it, but if the inflammatory tissue is subjected to numerous little squeezes, twists, and pulls, the highly toxic material is forced into the general circulation. No one, who has not tried to limit the absorption of toxines by treating inflammatory

areas as though they were sponges filled with deadly poisons and, therefore avoided squeezing them, can have a correct idea of what an important factor this is. In our experience, the improvement in the pulse and temperature and the general condition of the patient has been just as rapid after the institution of the simple rest treatment as after any operative procedure, and in not a single case has anything occurred to shake our confidence in peritoneal rest as a means of thus limiting the further spread of the infection and reducing the absorption of toxines. Only two cases in the writer's total experiences have shown any exacerbation of peritoneal symptoms after beginning the treatment, and in each case the exacerbation followed gross errors in handling the patient.

The importance of being able, in the great majority of intraperitoneal infections, to limit the further spread of the infection and at the same time reduce the absorption of toxines to a safe minimum by simply enforcing peritoneal rest can scarcely be overestimated, for not only does it enable one to almost eliminate the danger of postoperative general peritonitis even in cases operated for intraperitoneal infections, but it enables us to choose the most favorable time for operation. I have already called attention to the fact that once a condition of peritoneal rest is obtained, cases of even extensive peritonitis show a rapid localization of the inflammatory process which either subsides entirely or ends in the formation of a localized abscess, and if we study the inflammatory processes occurring within the peritonæum from a purely pathological view point, we find that they undergo perfectly definite sequences of changes in which we find three stages of the disease corresponding in clinical experience to periods showing wide differences in operative mortality. During the first stage, we find that if the peritoneal lesions exist at all, they are as yet not associated with marked alterations of the peritonæum itself, the lesions at this early period being of such a type as to require, if any, only temporary drainage. After the peritoneal infection has existed for more than about thirty-six hours, the peritoneal lesion becomes of such a character as to make the removal of the source of the infection no longer in itself curative. No matter what the extent of the peritoneal involvement may be, the peritoneal lesion is at this time essentially a diffuse inflammatory process and the pathological conditions are of such a nature as to make drainage at best difficult and often impossible to accomplish efficiently, so that the inflammatory process of this period is hardly benefited by operation. This may be called the intermediate or diffuse stage of the peritoneal infection. On the other hand, if the peritonæum is kept at rest during the stage of diffuse inflammation, we find that in the milder cases, the peritonitis has largely disappeared by the eighth or ninth days, while by this time the more severe pus cases no longer present a diffuse undrainable lesion, but in its stead a well defined abscess cavity, the drainage of which, no matter how great the quantity of pus may be, is a simple and satisfactory procedure.

There can be no doubt of the advisability of operative interference previous to the time of the full development of the peritoneal infection, nor is there any doubt of the satisfactory results and low mortality of operative work in the stage of localized abscess formation. Operative interference in the intermediate stage has always been accompanied by a high mortality. This has been proved true in the hands of the most skillful operators and the mortality of the occasional operator who interferes at this time is often little short of appalling. The clinical results of Ochsner and many others now overwhelmingly show that by limiting the further spread of the infection and reducing the absorption of toxines to a safe minimum, the vast majority of cases seen during the stage of diffuse intraperitoneal infection can be carried over for operation at a later and more favorable period, when the bacteria and their toxines may be successfully removed by drainage.

5. *The preservation of the patient's natural powers of resistance.* Some of the chief means employed to aid Nature in her fight have already been mentioned. In order that their powers of resistance should be at their best we have made every effort to keep the patients under the best possible hygienic conditions as regards good nursing, plenty of fresh air, and the avoidance of all things which might exhaust the vitality of the patient.

6. *The removal of toxic material from the stomach.* Many of the alarming symptoms in severe cases of peritonitis are undoubtedly due to the absorption of highly poisonous material from the stomach and duodenum. This has long been recognized as a clinical fact, and the recent experimental investigations of Roger, Maury, and others give us additional insight into the peculiarly toxic properties of the stomach contents under certain conditions. Patients whose stomachs are full of toxic material usually have a characteristic facial expression and present the general picture of one on the verge of collapse, all of which is promptly changed for the better by gastric lavage. We have washed the stomach whenever there has been severe nausea or vomiting or when the general condition seemed to indicate a stomach full of toxic material.

ANALYSIS OF CASES.

In studying the results obtained by the plan of treatment as outlined in the foregoing, I have included only those cases in which there was no question about the presence within the peritoneal cavity of an active infection, and in thus limiting the cases to those having a pathological diagnosis of an active infection, I have excluded 165 out of a total of 275 cases of appendicitis, and in like manner I have excluded 121 out of a total of 189 cases of pelvic inflammation, and thirty-nine out of forty-two gallbladder cases. All cases of peritoneal infection from any cause whatever, have been included and all deaths occurring either as a direct or remote result of the infection are included in the statistics.

During the time since we have been adhering to this plan of treatment, we have had under our care in the Ellis and Physicians' Hospitals 180 cases of acute intraperitoneal infection, divided as follows:

Acute appendicitis,	110 cases	5 deaths.
Acute pelvic peritonitis,	61 cases	no death.
Perforated empyema of gallbladder,	3 cases	no death.
Typhoid perforation,	2 cases	1 death.
Perforating duodenal ulcer,	2 cases	1 death.
Acute hæmorrhagic pancreatitis,	1 case	no death.
Puerperal general peritonitis,	1 case	1 death.

In fifty-one cases of acute appendicitis, the infection was either confined entirely to the appendix or the peritoneal lesion, was local in character, and did not show the presence of free pus. All of these patients made uneventful postoperative recoveries. Thirty-three were operated upon during the first forty-eight hours of the attack; six between the third and seventh days; and twelve after the eighth day. Two mild cases of appendicitis were not operated in, because business interests made it imperative that the patients should have the speediest possible convalescence. One abscess case complicated by pregnancy recovered without operation. The patient was improving when first seen by us and we thought it better to trust to natural processes rather than to operate and risk a miscarriage with a drainage opening into the abdomen.

Twenty-one cases of perforative appendicitis, two cases of ruptured tubal abscess, one perforated empyema of the gallbladder, one typhoid perforation, one perforated duodenal ulcer, and one case of acute hæmorrhagic pancreatitis, making twenty-seven cases in all, were operated in during the primary stage of the diffuse peritonitis with three deaths, two appendix cases and one case of duodenal ulcer. All of these cases were operated in within forty hours of the onset of the peritoneal infection and all showed large quantities of free seropurulent fluid in the peritoneal cavity, except the pancreatitis case, in which the fluid was hæmorrhagic. The twenty-four patients who recovered convalesced without alarming postoperative trouble in any case. The two fatal cases of appendicitis occurring in this group are worthy of reporting in detail as they represent types of cases which will probably always give trouble to the surgeon. One was operated in on the first day and the other on the second day of the attack.

Case I. The fatal case in the first day group was that of an old lady, of sixty-three years of age, who, for some time previous to the attack of appendicitis, had had a very irregular intermittent pulse, and who looked like a desperately bad risk from the very first. The appendix in this case was perforated near the cæcum and there was a moderate amount of fluid in the peritoneal cavity. The most noteworthy pathological feature was that of a gangrenous and perforated appendix accompanied by only very slight evidence of reactive inflammatory changes in the remainder of the appendix. This we interpreted at the time of the operation as representing a very low grade of resistance on the part of the patient, which conclusion was subsequently confirmed by the postoperative history of the case. The appendix was removed and the abdomen closed without drainage. The patient did well for two days, and then symptoms of a localized peritonitis began to develop with slight infection of the abdominal incision. There was only moderate distention and no vomiting, but the patient died four days after the operation of toxæmia and heart failure. Probably we should have drained this case, but the abdominal conditions did not seem to warrant it at the time of the operation, and we thought it better to risk the absence of drainage rather than to subject the patient to the more tedious convalesence of a drainage case.

The fatal case in the second day group is of special interest in so far as it typically represents some of the difficulties which will probably always be encountered and which tax to the utmost the judgment of the surgeon.

Case II. A child, aged four, had been sick forty-eight hours. At first, there was no evidence of peritonitis, but following the giving of a cathartic, the symptoms of peritonitis promptly developed On admission, there was slight distention and the lower half of the abdomen was quite rigid with very marked tenderness. The question of the advisability of operating was carefully considered and we decided to operate immediately, because in young children it is very difficult to carry out the rest treatment, the child insisting upon having water to drink, and if this is denied him, it is almost impossible to keep him quiet in bed. Then, too, the mother and all the rest of the relatives usually add their full quota to the difficulty of enforcing what is, at best, a rather strict régime.

Operation disclosed the entire peritoneal cavity filled with seropurulent fluid, except within the region of the appendix where the fluid was of a distinctly purulent character. The peritoneal surfaces were reddened with here and there a few flakes of fibrin, the entire picture being that of a second day diffuse peritoneal lesion. The partially gangrenous appendix was removed, and a gauze and rubber tube drain carried to the head of the cæcum and a rubber tube to the bottom of the pelvis. After the operation, the patient was placed in the Fowler position. There was no immediate shock from the operation, but soon evidences of a very severe toxæmia began to develop, and in seven hours the temperature had risen to 105° F., the pulse to 180, and there were muscular twitchings and clonic convulsions. The patient died of toxæmia thirteen hours after the operation.

This is a case in which the operative manipulations, limited as they were, undoubtedly determined a very marked and fatal increase in the absorption of the toxines. Had this been an adult, we would unhesitatingly have employed the Ochsner treatment.

Case III. The duodenal ulcer case, a woman of sixty, was operated in under the diagnosis of a strangulated hernia, a large inguinal hernia having become irreducible at the onset of symptoms. A diffuse peritonitis of unknown origin was found and drained through the inguinal ring after reducing the hernia. The condition of the patient did not warrant further search for the cause of the peritonitis. She was put on the routine postoperative treatment, and much to our surprise, in forty-five hours the abdomen was flat and the general condition was excellent. At this time, liquids by mouth were ordered, with the result that within two hours the patient went into a state of collapse and died a few hours later, the autopsy showing a perforated duodenal ulcer.

Only seven cases were operated in during the intermediate stage of the peritoneal infection with four deaths. One, a case of typhoid perforation, was moribund when admitted. Six were appendix cases, and four of these six were third day cases with peritoneal symptoms of only about forty-eight hours' duration. At operation, these four cases all presented diffuse, seropurulent, intraperitoneal lesions with fairly abundant fibrin, and distinct roughening of the peritonæum. Although three of these patients recovered, it is quite probable that the safest procedure would have been to defer operating, according to the method of Ochsner. The peritoneal symptoms were little, if any, influenced by the operation and drainage, and three of the patients subsequently showed evidence of insufficient drainage by the development of secondary intraperitoneal abscesses which finally opened into the operative drainage tract in two patients, while the third patient died on the eighth day following the operation. In one of the cases which recovered, a parotiditis developed which considerably delayed the convalescence.

Certain it is that, in the writer's experience, similar cases progressed more favorably when treated by the Ochsner method until the localization of the peritoneal lesion was accomplished. Subsidence of temperature, pulse, and abdominal symptoms have been just as rapid without the operation and the

danger of secondary abscesses, and the possible necessity of a secondary operation has been practically eliminated, by waiting for the stage of localized abscess formation before operating.

A fatal case, operated in on the sixth day, is of interest, chiefly because of a number of misfortunes which might have been avoided had we used better surgical judgment at several periods during the time the case was under treatment. The history of this case is as follows:

Case IV. H. T., aged nine, school girl: Attack began four days before admission, with only moderately severe pain, localized in the right side of the abdomen. The patient vomited once or twice during the first onset of the pains. Forty-eight hours before admission, the pains became very severe, general in character, and the patient vomited frequently from this time until admission. Examination showed a well developed, fairly nourished child, facial expression anxious, temperature 103° F. Examination of chest was negative, abdomen level, costal border tympanitic, everywhere rigid and tender. The physical examination left no doubt as to the presence of a diffuse peritonitis and the history showed it to be at least forty-eight hours, and possibly three or four days old. The patient was put on the Ochsner treatment, and within thirty-six hours the temperature was 100° F., with a pulse of 100; there was no vomiting and the general condition was much improved. At this time, the patient was transferred from one ward to another, and immediately following this the pulse rose to 120 and became of very poor quality. Coincident with this, there was an increase in the abdominal distention and the general condition of the patient became very grave. Two days later the pulse and general condition were somewhat improved, but the abdominal distention was still marked, although rigidity was beginning to be localized to the right lower quadrant. We should have left well enough alone at this time, but, becoming impatient and hoping against our better judgment that incision and drainage might "relieve tension" and lessen the toxæmia, we opened the abdomen through a right rectus incision, and found a typical sixth day diffuse lesion, characterized by multiple small foci of pus, with all peritoneal surfaces as far as examined, covered with a sticky fibrinopurulent exudate. One rubber tube and several gauze wicks were inserted, and a large moist boric dressing applied. Except for a slight rise in temperature, eight hours later, the operation caused no appreciable change in the patient's condition and treatment was continued as before operation. Two days after the operation, the distention began to lessen and the evidences of diffuse peritonitis finally subsided, but symptoms of septic absorption persisted, and although we were certain that a localized abscess or abscesses existed at a point not reached by the drains, the position of the same was not determined during life. The patient finally died the twenty-third day after operation, and autopsy showed a sharply localized deep pelvic abscess, which should have been discovered by rectal examination.

In reviewing this case, the following points stand out prominently: First. It is one of only two cases in the writer's experience in which there has been an increase in the peritoneal symptoms after beginning the Ochsner treatment. Second. The exacerbation of the peritoneal symptoms in this case followed directly upon moving the patient from one ward to another. In the other of the two cases, it followed turning the patient almost on her abdomen, in order that the nurse might bathe her back. A patient in the condition that this one was, should not have been moved, and it is very probable that the handling of the patient may have spread the infection, or at least have caused an increased absorption. Third. The patient was operated upon the sixth day of a diffuse peritonitis and the pathological conditions encountered were typical of the period, namely, a diffuse, undrainable lesion, characterized by numerous little pus pockets with all peritoneal surfaces glued together by a sticky fibrinopurulent exudate. The operation accomplished nothing except a transitory increase in the toxæmia, and later, when operative interference in all probability would have resulted in saving the patient, we were deterred from again opening the abdomen because of the unhealed incision of the first operation. Fourth. In spite of the increase of peritoneal symptoms on the fourth day, with a very extensive peritoneal involvement and the unsatisfactory operation, this patient lived until the twenty-third day after operation, by which time the diffuse peritonitis had entirely cleared up, leaving simply a deep pelvic abscess, the timely recognition and drainage of which would, in all probability, have saved the patient's life.

Ninety-two cases were operated in after the subsidence of the acute symptoms, with one death, due to Ludwig's angina, which developed after all peritoneal symptoms had subsided. These ninety-two cases every one of which had earlier shown signs of active peritoneal involvement and at the time of operation presented localized abscesses occurred as follows:

Acute appendicitis,	29 cases..with no death
Acute pelvic peritonitis,	59 cases..with no death.
Perforated empyema of gallbladder,	2 cases..with no death.
Perforated duodenal ulcer,	1 case ..with no death.
Puerperal general peritonitis,	1 death on sixteenth day.

Eleven of the appendix cases were exceptionally severe cases with unmistakable evidences of active peritoneal infection when first seen, and the same may be said of the two cases of perforated empyema of the gallbladder, the duodenal ulcer case, and the puerperal general peritonitis case, and yet the subsidence of the alarming symptoms and the localization of the peritoneal lesion in all but one of these cases was absolutely without incident.

This one case has already been mentioned as one of the two cases in the writer's experience in which there has been an increase in the peritoneal symptoms after beginning the rest treatment. On the fourth day after the attack, and two days after beginning the Ochsner treatment, the patient was turned, almost on her abdomen, in order that the nurse might rub her back; this injudicious handling was followed by a sudden, severe pain, and, within a few hours, by an increase in all the peritoneal symptoms. However, with this exception, the patient made an uninterrupted convalescence and was operated upon for an appendicular abscess on the eighth day of the attack.

The one fatal case in this group is, I believe, worthy of reporting in detail:

Case V. The patient was admitted on the sixth day following delivery and on the third day of a general peritonitis. On admission the abdomen was absolutely rigid, the skin was cold and clammy, and the pulse could not be counted at the wrist. The patient was put on the rest treatment, and we fully expected her to die within a few hours. Much to our surprise, she survived the night following admission and was decidedly better the next morning, and continued to improve until the temperature reached normal on the ninth day of the peritoneal infection. We should have operated at this time, but owing to some difficulty in reaching her relatives, we delayed operation for four days, and, in the mean time, a left parotiditis had developed. We operated on the thirteenth day of the peritoneal infection, and drained a well defined

abscess containing more than two quarts of pus. The patient died suddenly of asphyxiation due to Ludwig's angina three days after the operation. The abdomen was perfectly flat at this time, all symptoms of an active peritonitis having disappeared.

This case should have been operated in as soon as we were sure that we had a localized abscess on the eighth or ninth days. Operation at this time would probably have forestalled the development of the metastatic infection.

CONCLUSIONS.

In conclusion, I would emphasize:

1. The complete removal of the infection is the ideal procedure.

2. Removing the source of the infection and instituting a postoperative régime of peritoneal rest (Murphy's method) give almost ideal results in early cases of peritonitis.

3. In our experience we have failed to get good results when we attempted to apply Murphy's method to cases with peritoneal infection of more than forty hours' duration.

4. The most severe intermediate stage cases have given us almost no worry at all when put on the Ochsner treatment.

5. Once the peritonæum has become infected, peritoneal rest is probably the most valuable single therapeutic means at our command, and should be rigidly enforced whether one operates early or late.

613 State Street.

"CELESTIAL" SURGERY.

By John Knott, A. M., M. D., Ch. B., and D. P. H. (Univ. Dub.); M. R. C. P. I., M. R. I. A.; etc.

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The recent awakening of the Celestial empire divides the general geographical, ethnological, and imperial interests and prophetic curiosity of this preliminary decade of the nineteenth century, with the opening up of the interior of the dark continent. The vast areas of recent (at least, relatively) bloodless conquest of European civilization have become objects of discussion so universal during the past couple of decades that the fact is seldom recalled to the consciousness of the citizen of even more than average intelligence that the terrestrial results already attained would have seemed to our ancestors as mysteriously remote as even the calculations of the course, and announcement of the chemical composition, of Halley's comet; or the attainment of the present atmospheric capabilities of the aeroplane. And for the enlightenment of the physician in this department, there is no more illuminating process than that of examination of the ways and means of the art of healing which were of current use in those immense and little known sections of the earth's surface, before their recent intimacy with the habits and arts of the north and west. Strange—to a startling degree, indeed—were the methods of the slant eyed Mongolian and the thick lipped descendant of Ham, as contrasted with those of the pale faced offspring of Japhet. That is (as, of course, inevitable) at first sight; for it will be found, on close and enlightened (and unprejudiced) scrutiny, that the medical theory and practice of the most populous of all the nations, although they have been referred to with approximate justice as "a simple farrago of nonsense and superstition," really present a startling family resemblance to that of our own Anglo-Hibernian forefathers—and of, so far as I know, every other family of the human race in the dim twilight of its scientific enlightenment. And, as the practical interest of the English speaking peoples is sure to wax stronger in the direction of the Mongolian races as the years of the twentieth century pass on and pass away, a brief—somewhat panoramic—glance at the ultraconservative surgery of the Chinese healer (of even the later years of the twentieth century) may, we hope, be regarded by the inquiring reader as worthy the very short period of time expended.

As in the case of very many mechanical—even artistic—inventions and processes, such as the making of gunpowder, the employment of block printing, and various other of the most important means and methods which have from time to time been devised by the more restless and ingenious members of the human family for the extermination or delectation, or general physical and mental improvement (or torture, or deception), of their posterity as well as contemporaries, *massage* was known and systematically practised in China for untold centuries before the date of its recognition as a definite surgical procedure in the lands of Western civilization. But there is a special variety of its practice which does not appear to have appealed with effective sympathy to the minds or bodies of the citizens of the Occident. I refer to a special version of the same, devised by the Taoist bonzes, in which there is superadded to the various frictional and kneading movement—a *hammering* of the muscle and of the bone. The procedure is known to the native as *Koung-fou*, and is carried out with the aid of wooden batons; of which one is a foot in length and six inches in circumference; while the other is six inches in length, and half an inch in diameter. There is another instrument specially devised for rolling friction. Dr. Matignon, who published some years ago an interesting account of his Chinese experiences and observations, describes it as *"essentiellement constitué par deux roulettes accouplées sur le même axe, lequel est monte sur un manche de 20 à 25 centimetres de longueur."* Dr. Dudgeon, who took special trouble and pains in the investigation of the Chinese practice of massage, has clearly proved that for many, many centuries before the principles of Swedish gymnastics had been established by Lind, those Chinese priests were acquainted with the general principles of *Kinésothérapie*.

The universal experience and observation of Western physicians who have visited the Celestial empire, and given the results of their travelled enlightenment to the world, go to prove that China has always persisted in displaying, in her surgical as well as in her social and political (and various other intellectual) practices, the same unchanging routine which hopelessly excludes improvement. Although it took a very early lead in a good many directions of mechanical, and chemical, and artistic exhibitions of ingenuity (such as those already referred to), it had already assumed the fossil state in even pre-

historic times. The experienced observers to whom I have referred arrived at the general conclusion, towards the end of the past century, that the medicine then in vogue in China not merely showed less scientific progress, but was actually less intelligent and intelligible than was that of Hippocrates. Their medical literature is copious, and its bibliography has been drawn up with studious and scrupulous care; but the whole contents of a medical library will be found on examination to consist of unreasoning commentaries on the works of a few old masters, whose texts, like those of other authoritative and inspired volumes of Oriental literature, are far too sacred to suffer the sacrilege of one jot or tittle of "modern" innovation, or the unsanctified communications thereof. The more junior of those "Masters of Medicine" were contemporaries of Machaon and Podalirius, who attended to the wounds of the besiegers of Troy.

No orthodox Chinese medical practitioner had (or even has) ever dissected any portion of the human body. Accordingly, their ideas of anatomy and physiology are matters of faith—confirmed by images (models) which have been reproduced in similar dimensions for untold centuries. Their osteology teaches that the skull is formed by one bone; so is the pelvis; the number of ribs varies with the individual; at the junction of arm and forearm is placed a cubital patella. According to Chinese splanchnology, the small intestine communicates with the cavity of the heart; while the colon, after describing sixteen circumvolutions, opens into the lung, and there terminates. The heart governs all the vital processes, in combination with the cavity of the stomach; it supplies all ideas, and all pleasurable sensations. The liver is the habitat of the soul, and it is from this organ that all noble and generous sentiments emanate. The gallbladder is the reservoir of courage; its ascent in the body is the cause of a fit of anger. They have an idea of the continuous motion of the blood—but it must be added that it seems to have been the product of an imagination more riotously oriental than even that (or those) which created the other leading items of their physiological erudition.

In its ultimate structure, the human body is composed of *five elements:* fire, water, earth, wood, and metal. Each of these elements is in harmony with the respective members of the series of *five* planets, *five* tastes, *five* colors, *five* metals, *five* solid viscera. All diseases originate from disturbances of the original and essential quintic harmonies of those elements.

This sketch of the Chinese physician's ideas of the structure and functions of the more important of the organs of the interior of man's body furnishes cause for some genuine congratulation to the citizens of the greatest of oriental communities on their "sovereign horror" of surgery. Possibly the latter fact also may be held to provide the true explanation of the childish views of John Chinaman on such subjects; he does not explore. And the Western observer accordingly comes to the conclusion that the "Celestial" abhorrence of surgical procedures is of the first importance in the maintenance of the integrity of that great Empire and its vast population. For direful would be the inevitable results of the surgical exploration of the interior of a vital organ by the Chinese practitioner! Accordingly, the "capital" operations have remained practically unknown; and the procedures which approach the dignity of "operation" may be said to be limited to the opening of superficial abscesses, the employment of *acupuncture,* and the application of *cautery.* The Chinese horror of the employment of the bistoury is not at all due to fear of the accompanying pain—of which sensation those people are peculiarly, even inexplicably, tolerant. But—from the days of Confucius, at least, down to the present period, the Chinaman has believed that the most sacred and precious gift of his ancestors is his body; and that every injury or loss of substance which *it suffers* is an insult to filial piety, which is the most devoutly sacred of all his feelings. This cherished central idea of all his feelings of devotion is the special characteristic of all Chinese religious philosophy, and it permeates all classes of society. Patients who came under Dr. Matignon's care in the French Hospital at Pekin were induced to undergo necessary operations only on having received the most solemn assurance that the ablated matters—tumors, injured or diseased limbs, etc.—would be all carefully restored to them on leaving the institution. With the same religious care the Chinese eunuch preserves in bottled spirit the sexual organs of which he had been artificially deprived, for the purpose of having them buried with him at last; so that, on his arrival in the other world, he may be able to present himself with a whole body to the greetings of his adored ancestors. In this case, there is a further reason, too, as we will see later on.

Although the Chinese surgeon is so peculiarly modest in the display of any operative powers on the higher scale, he is lavishly liberal in his employment of *acupuncture.* This procedure of course involves no appreciable loss of tissue. Woodcut illustrations are always in circulation (and used to educate, and refresh the memory where necessary) which indicate the positions of the "elect" points of puncture; and these are found to be numerous and by no means far between. The operation of acupuncture appears to have been for untold ages *the* great surgical procedure of the Chinese Empire and its population. It has been employed with equal confidence and promptitude in the treatment of *fracture* and of *constipation,* of *ophthalmia* and of *cholera!* Up to very recent times there stood, in the Imperial College of Medicine at Pekin, a bronze mannikin furnished with a number of small holes corresponding to the respective positions of the favored points of puncture on the surface of the human body. At his qualifying surgical examination the candidate was placed before this mannikin, which had previously been covered with paper; and he was required to pass his needle through the paper into the holes prescribed for the treatment of any disease named by the examiner. Accurate aim was positive proof of trustworthy knowledge! Thus the teaching and testing are suggestive of the *devolutionary* process which has recently been advocated here: of abolishing lecturing and "cramming" (i. e., *teaching*) and making every diagnosis by the suggestions of the surface anatomy

as indicated through a "medium" who functions as the "managing director" of the diploma factory.

The *moxa* is essentially a Chinese—or, at least, Mongolian—weapon of the combat with disease. The lamas construct a moxa of wool, with peas and leaves of mugwort and centaury; which are dried, pulverized, and rubbed into its interstices. They treat cholera by a system of generally diffused acupuncture, in which all regions of the surface of the integument are visited, but special attention is given to the sublingual, subungual, and circumanal areas. Then, as a last resort, a modified application of the moxa is used to the epigastric region. And it is after this fashion: a small pile or mound of salt is placed thereon; over that a thin layer of ginger; then one of dried mugwort leaf; the whole is then moistened with alcohol and ignited.

The uterine speculum, the midwifery forceps, and the urethral catheter have remained unknown luxuries of surgical practice in the Celestial empire —and are, even now, to be seen only on the narrow fringe which has been contaminated by the presence of the palefaced intruder. Small leaden bougies have, however, been in general use for the purpose of counteracting the tendency to cicatricial atresia of the urethra in the members of the semimartyred army of eunuchs. This numerous—and highly representative—section of the Celestial community owes its existence to a special imperial privilege; which has never been accorded to more than *some* members of the imperial family, in addition to the reigning Emperor himself. The latter has long been accustomed to own, nominally at least, an attendant battalion of 3,000 eunuchs. The princes and imperial princesses were accorded the right to thirty each; the nephews and younger children of his imperial majesty to twenty; the royal cousins to ten. The representative descendants of the eight Manchu princes who aided in the original foundation of the reigning dynasty are also privileged to possess ten eunuchs each. The privileges of the position in all of these cases are so well assured, and the struggle for existence of the members of the swarming population is so great—even overwhelming in its exactions—that boys are sold by their parents, and even young married men are found to offer their own persons, for the operation of emasculation, and consequent profession of eunuchism. No anæsthetic is used!—the imperturbable "Chinee" would not dream of taking advantage of it. The patient is bound on a structure somewhat resembling a European camp bed; his shoulders are firmly held by one assistant, while his thighs are held apart by two others. The operator grasps the root of the penis with the scrotum in the left hand, and proceeds to compress and twist them, so as to expel as much of the blood as possible. When this preliminary stage of the procedure has been effected, he asks the final question—of the parents when the patient is a boy: "Do you consent?" When the answer is in the affirmative, he instantly removes with one sweep of the knife the penis and scrotum (including, of course, the contents of the latter)—making the section as close as possible to the puboperineal surface. Sometimes a straight bladed knife is employed for the purpose; other operators prefer one with a falciform curve; on some occasions a hatchet is used in the operation! Startling as the primitive crudeness of the procedure, we are credibly assured that there are not more than three or four per cent. of fatal cases. The inevitable sequel of a tendency to cicatricial atresia of the orifice of the severed urethra sometimes proves very troublesome, especially in the younger subjects. But the most frequent of annoying sequelæ is the incontinence of urine which may result. It is always watched for by the operator. He tolerates the trouble for some time after its development; when it displays a tendency to persist, he proceeds to treat it by beating the patient every time that the accident occurs. This primitive clinical procedure is said to be the only efficacious one; and it has, accordingly, been always retained in high favor. A wooden or metallic (preferably leaden) bougie is used for the purpose of preventing the process of cicatricial contraction of the orifice of the divided urethra from proceeding too far. The ablated organs are preserved with a devotedly religious care—to be, at last, buried with the owner. The very pressing necessity for observation of this custom must always be recognized on remembering that the Chinese Pluto at once transforms into mules all eunuchs who are transmitted to his hallowed realms unaccompanied by those superessential relics. The cicatrix which ultimately remains as the result of this operation is found to present an approximately triangular outline—the apex being directed downwards. The remote results are that the eunuch very frequently suffers from a combination of cicatricial stricture of the urethra with partial incontinence of urine. On this account he is, in a large proportion of cases, the victim of chronic vesical catarrh—which sometimes effectively predisposes to the formation of vesical calculus. Accordingly, as a result of the partial incontinence of ammoniacal urine which is so often present as to form a well recognized characteristic, and in presence of the usual outward and odoriferous signs of the inward pathological conditions, there has come into existence in Pekin a French proverb: *"Il pue comme un eunuque; on le sent a cinq cents pas."* Such are the usual surgical results of the most formidable operation known to the most populous country of the world—as unsurgically performed by the privileged amateur.

The individual who has been subjected to the process of emasculation by the mere removal of the testicles is not in request in the Chinese metropolis. The privileges of the female sex have, as of course all readers know, been very much restricted in the overpopulated land of the mysterious Celestials. Accordingly the Chinese of the twentieth century cannot possibly raise the value of this article of possible—and formerly classical—luxury to the lofty level which it attained in presence of the appreciative competition of the skilled sensuality of the riotous opulence of the Roman dames in the days of the stoically scathing sarcasms of Juvenal. But the Chinese type of eunuch still ministers to the gratification of the unspeakable depravity of his master, as did the corresponding specimen to that of his purchaser on the banks of the Tiber.—when

the *spado* and *castratus* were both so familiarly known; and respectively appreciated by the different sexes, at so high a pecuniary valuation.

The fact is worthy of passing notice, in concluding this sketch of a strangely conservative surgical system, that Mongolian medicine had anticipated the suggestion of the late Professor Brown-Sequard by untold centuries, in prescribing the testicles of rams to elderly men who were ambitious to reinforce their evanescent sexual energies. Also that the employment of mercury in syphilis had been familiarly known, and thoroughly appreciated, in those vast and remote regions of teeming humanity. Curiously enough, the slant eyed Oriental is afraid to take the uncanny metal internally; so that it has been habitually utilized by application to the skin. So that even the imperturbable Mongolian may be found to inherit some therapeutic awe—of groundless origin!

34 York Street.

THE USE OF THE ASSOCIATION TESTS IN THE STUDY OF CERTAIN TYPES OF INSANITY.*

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Formerly the diagnosis of cases of insanity was based largely, if not entirely, upon the type of symptoms the case in point exhibited.

If the predominant symptoms were of a depressing character, a diagnosis of melancholia was made, and it was acute or chronic according to the length of time the symptoms had existed. If the predominant symptoms were those of a maniacal character, with exaltation of the emotional state, the diagnosis of mania was made, and it was acute or chronic according to the duration. If most of the ideas were of a persecutory nature, especially if there were even only a slight tendency to systematization, it was paranoia, etc.

Many patients who had two or more attacks showed, during one attack, among other symptoms, a marked depression with retardation of thought and speech, the patient not only having difficulty in thinking even to answer very simple questions, but also difficulty in speaking the words after he had made up his mind what to say. This retardation also was evident in his muscular movements as seen in the slow, hesitating manner in which he arose from his chair, moved about the room, ate his meals, etc. In the next attack the patients were active, restless, emotionally exalted, continually talking, rapidly changing from one subject to another, etc., etc., and the diagnosis was made of melancholia or mania or circular insanity. A large majority of these patients showed a distinct tendency to recover from each individual attack and when recovery took place there was little or no deterioration of their mental faculties.

Within recent years these forms of insanity just mentioned have been grouped under the head of manic depressive insanity—of a maniacal or depressed phase, as the case might be.

*Read before the Academy of Medicine, Binghamton, N. Y., January 18, 1910.

Another group of cases that came on early in life as a rule, and in which the patients among other symptoms showed a distinct tendency to rapidly deteriorate, were formerly called primary dementia for want of a better term, to distinguish them from the dementia following active types of insanity, secondary or terminal dementia. In these cases of what was formerly designated as primary dementia, the patients showed an early laxity in the care of their personal appearance, habits, etc.; were frequently found whispering, smiling, and laughing to themselves, admiring themselves in the mirror; had sudden destructive impulses; showed marked resistiveness to any efforts made to care for them, the resistiveness being senseless; at times became stuporous; refused food; delusions and hallucinations developed, usually not fixed in character, etc.

To this class of cases has lately been given the name dementia præcox, subdivided into the simple, catatonic or paranoid types. These patients did strange things—walked in circles, tapped on a certain spot on the ward, assumed a peculiar awkward gait or sat down in constrained positions, or they would repeat certain words or phrases over and over again, etc., and to these oddities or peculiarities was given the name, mannerisms, stereotypes, etc. There was no effort made to find out why the patient acted so and so or why he said so and so or repeated such a word or phrase so many times. The reason for many of these peculiarities was found out by the use of the association tests.

The association tests had been used for many years by experimenters in psychology, among others Weber, Fechner, and Wundt, in Germany, and James in this country, but it was not until a comparatively few years ago that it has been applied to determine certain factors in mental diseases.

In about 1880 Kraepelin made use of it to study mental diseases, but it was not until 1895 that its real importance was established. Breuer and Freud, German psychiatrists, in 1895 made extensive studies in the psychanalysis of hysterical states and "showed that hysterical symptoms were symbolic representations of individual experiences, which were incompatible with the personality, and hence repressed from consciousness,"—e. g., that certain things these patients did and said, in their hysterical state, were symbolic of former experiences passed through, these experiences being incompatible with the patient in his normal state, and were lost in the subconscious.

As a result of these investigations Bleuler and Jung, of the University of Zurich, conceived the idea that it might be possible, by making a psychanalysis of these cases, to determine the explanation of certain morbid phenomena that they exhibited. In their analysis they made use of the association tests, and were able to demonstrate a connection between the various mannerisms, etc., which these patients exhibited, and some previous experience in the patient's life, by making a careful analysis of the situation out of which these mannerisms developed. A certain number of stimulus words were taken and the patient was asked to repeat the first word that came into his mind after hearing the stimulus word. The time that elapsed between the stimulus

word and the reaction word or words of the patient was accurately measured. It was found that following many stimulus words the reaction time was much prolonged beyond the normal average, and in order to discover the reason for the delayed reaction between the stimulus and reaction words, a buried "complex" was brought to the surface. To this prolonged reaction time or to a faulty or lack of reproduction or both, is given the name, "complex indicator." These complex indicators usually have an important bearing on the psychogenesis of the case.

In the United States the pioneers in this field have been Adolph Meyer (formerly director of the Psychiatric Institute connected with the New York State Hospitals System, now director of a Psychiatric Clinic in Baltimore), and August Hoch, present director of the Psychiatric Institute of New York State, and they have gone still further by pointing out that many cases develop through unhygienic adjustment of the individual during or following an emergency, that is, maladjustment of the individual in relation to his environment as a result of bad mental hygiene.

Meyer lays stress on the necessity of an exhaustive causal analysis. He also believes that it is possible by habit training and regulation of mental and physical hygiene, to prevent in many cases, the occurrence of the disease, or, if the disease is in its incipiency, an improvement or a recovery may be brought about by certain mental treatment.

Our experience in the practical use of the association tests has been rather limited, but by its use we have been able to not only corroborate many of the facts that bore upon the development of the patient's insanity, which facts were discovered by making a careful psychanalysis of the case, but also, new facts were discovered which we would not have otherwise become cognizant of.

Our method has been as follows: The patient is taken into a quiet room and placed in a chair facing a blank wall, with no pictures or other things to distract the attention, and it is explained to him that he must concentrate his mind as far as possible, entirely on the work. He is told that a word will be spoken to him and he is to repeat the first word that comes into his mind after hearing the word given him and that the time elapsing between the word we speak to him and the word he repeats will be accurately measured by a stop watch. He is cautioned not to try to think of any particular word nor to try to explain the meaning of the word he hears, but to keep his mind free and say the first word that occurs to him. Several trials are made to be sure that he understands just what is wanted. Then a list of 100 or more words is taken, many of the words, from our knowledge of the case, having a direct bearing on the history—the words being so arranged that every fourth one is a verb and the intervening ones are a noun, adjective, or adverb, alternately. It requires two people to do the work properly, one to repeat the stimulus words and to note the answers while the other holds the stop watch. Everything in readiness, the stimulus word is given and the patient responds with the first word that he thinks of. He is then asked if he can tell why that particular word came to him, if he can connect it with any event in his past life, no matter how remote, if it recalls to his mind any experience he has had, although it may have been partially forgotten, etc., and his explanation is recorded.

Time and patience on the part of both the experimenters and the patient are required, but the results are gratifying, for many things long since forgotten are recalled and many incidents that have a part in the formation of the psychosis are discovered.

Dr. Ross McClure Chapman of our staff assisted me in studying a number of cases and to him belongs equal credit for the work accomplished. Two of our cases are the following:

Case I. A. S. S., female; widow; high school teacher; age forty-nine; admitted to the hospital on October 5, 1908.

Family history: Patient came from a long lived ancestry. Paternal grandfather died of "softening of the brain," aged over seventy years. Two paternal cousins insane; one attempted suicide; one paternal second cousin, epileptic; two maternal cousins several times removed, "queer." Father died at the age of forty, of yellow fever. Mother living, and in fair health for one of her years, about seventy-five. Patient had one brother who died in infancy of "fits." There was no history of alcoholism, syphilis, etc.

Personal history: Father of patient was a lumber dealer Her mother from whom this history was obtained would not talk of her husband, her married life evidently not having been very happy. Patient's birth was normal. Infancy uneventful. She had measles, whooping cough, mumps, and "roseola," from all of which she made good recoveries. She began her schooling at the age of seven or eight and finished at about eighteen, receiving a high school education. Was a normal, healthy child, popular among her playmates; of a happy and equable disposition; impulsive and quick spoken; showing no peculiarities. In school stood well in her classes. Examination of menstrual periods were negative except that flow was always scanty. Shortly after graduation she went to Syracuse where she conducted a private school successfully for about a year and a half; and then returned to her mother's home remaining there until her marriage at the age of about twenty-four. A year and a half after marriage she suffered from an accidental miscarriage, at seven months; labor normal, but she bled profusely and for a time her life was despaired of. She recovered but regained her strength slowly. Her husband died after a short illness about two years later. For some months previous to her husband's death she was nervous, irritable, and at times depressed. During his illness she became emotional and hysterical. Shortly after he died she went to Albany to visit relatives; was absent minded and forgetful; apprehensive, afraid to go to sleep at night unless some of the relatives remained in her room. After her return home she was given to making impulsive remarks about her friends and relatives, which she afterward would deeply regret.

In April, 1893, she was committed to Brigham Hall Was apprehensive, delusional, and probably suffered from hallucinations. While there she was nervous; restless; at times refused food, and was mute. Had impulses of violence—assaulting the nurses, endeavored to take their keys from them and escape; embraced her pastor when he visited her—claimed that she was married to him. At one time visited the rooms of the other patients in a nude condition. Toward the latter part of her residence there she made several attempts at suicide. Was discharged as improved about seven months after admission. She then returned to her mother's home where she remained until her admission here. During this interval she continued to exhibit symptoms of insanity; became unduly interested in church work and was especially fond of being in the company of men, particularly so regarding the several pastors of the church of which she was a member. At one time she had a cousin who was studying for the ministry, remain at the house with her and her mother for some months. The mother had to request him to leave, because of her daughter's attitude toward him.

A few weeks before her admission here, her hallucina-

tions became more prominent and the delusion developed that a certain young man in Homer was her child—that she had been led to believe died at birth. She believed that this young man was being ill treated by the people with whom he was living and she finally carried a revolver, to protect herself as well as him. She was arrested by the authorities with a revolver in her possession; attempted to shoot the officer who arrested her. Thereupon she was committed here, and was received on October 5, 1908.

Since her residence here she suffered from many hallucinations of both sight and hearing; the delusion developed that she was married to one of the former pastors of her church at Homer (a different one from the one she spoke of while at Brigham Hall). Was subject to many impulses of violence; assaulted the nurses, threatening to kill them in order to get their keys, and regain her liberty. At times she went several days without speaking or eating; at other times was pleasant and agreeable; solicitous as to the welfare of her mother, and ate and slept well. In general she was neat and tidy in her personal appearance; maintained the delusion regarding the young man whom she believed was her son; showed a good memory for both recent and remote events; was well oriented; kept fairly well informed on current topics, but had no insight.

In taking her association test one hundred words were used. She reacted apparently more readily than the average, her shortest reaction being 0.8 second; her longest, 4.00 seconds, with an average of 1.8 seconds. Thirty-four per cent. of the total number of reactions exceeded her average of 1.8 seconds. The chief complexes as shown by her associations referred to—(a) her husband, (b) the boy, (c) her erotic nature.

To the first group belonged the following:

(1) Lazy—Quick. 3 seconds. Spoke of the rapidity with which she used to do her housework and how her brother in law used to accuse her of being lazy because she used to rest from her work several times a day. Said that her husband complained of being bothered by this brother a great deal. Characterized him by saying, "he had boiled down in him all the badness of the whole family. More than once Mr. S. shut the door in his face."

(2) Alone—Together. 1.4 seconds. "I thought of my husband; I don't know why I said it. We were happy together. I don't know as he ever spoke a cross word to me."

(3) Child—Father. 1.4 seconds. Cannot think why she said it. "I can't explain anyway." After many blockings finally said "I had a momentary picture of the boy and I thought of him as my boy and Mr. S. his father."

(4) To drink—To weep. 1.6 seconds.

(5) To love—To think. 1.8 seconds. These referred to an experience that she said she had one day while out walking with her mother. They saw a man lying in the gutter and evidently under the influence of alcohol. "We passed him; I could see he was much bloated; there was something about him—his attitude—that made me think it was my husband." "He looked at me as we passed and his eyes—Mr. S. had beautiful eyes." Certain parties had tried to make her believe that Mr. S. had an affair with a certain woman who lived over a saloon where he was forced to serve drinks. As she passed this saloon she noticed a boy nearby that looked like Mr. S. (Mr. S. had been dead some years before this took place, and according to the patient was not a drinking man).

(6) Coffin—Spear. 2 seconds. This referred to some palm leaves on the casket of her husband which were dislodged by a cousin in passing it.

(7) Laborer—Work. 1.6 seconds. Referred to Mr. S. and his hard work at the foundry. "He took the whole shop on his shoulders." She then went on to relate that he drank large quantities of water—that they found a rat in the water which he had been drinking. This brought up in her mind the old belief that a dead animal poisoned the water in which it was drowned, and she then went on to relate that shortly before her husband died he refused to take medicines from his nurse. She was urged to persuade him to take it, being told that if he took it, it might save his life. She did so, and says, "He never rallied afterward."

(8) Blood—Cool. 0.8 seconds. "Mr. S. thought I was just exactly right. Maybe it was because I was so cool in giving him that medicine." She then spoke of her child and said, "I don't think my mother ought to be expected to know about that child—whether he was dead or not. My mother was with me; my aunt took care of the child. I don't want any one to blame my mother for not knowing."

(9) To Pray—To weep. 3 seconds. "I used to sit and weep the winter after he died. At that time the church people got me interested and I used to go to church and pray."

(10) Saucy—Quick. 3 seconds. Referred to herself and her dispositon. Mr. S. used to say, "Anna, you haven't a fault, not a single fault." Mr. S. was a manly man.

To the second complex group belonged the following:

(11) To observe—To think. 1.6 seconds. This was closely related to the reaction immediately preceding.

(12) Dreams—Thoughts. 2 seconds. "There is so much talk about this new thought idea you know. When a person is asleep another person can think thoughts into that person's brain. It may occur to him as a dream. I had that experience when I went over the house and saw her hitting the boy over the head with a sickle. How I became imbued with the idea that he was in the house next door I don't know unless some one put it in my head. He is like my father's people, he is like me. I have studied him. Why should that woman's boy be like me? Why was he there unless they didn't want me to have an heir?"

(13) To punish—Exactly. 3.4 seconds. "I don't think I ought to have taken my revolver over there but I have been punished enough for that."

(14) Plaything—Boy. 1.2 seconds. Connection obvious.

(15) Angel—God. 1.2 seconds. "I thought of my mother and of my boy."

(16) Boy—Girl. 1.4 seconds. "The doctor said my baby was a girl and it always seemed to me queer for the nurse said it was a boy beyond question. When I was a young girl my brother in law paid me considerable attention. He had a mean streak and seemed to vent all his spite on me and yet he used to say he liked me."

To the erotic complex group:

(17) Paper—Pink. 22 seconds. In explanation she spoke of the fondness of her uncle for her and the fact that she was wearing a pink waist.

(18) Pretty—Homely. 3 seconds. Said that she spoke with hesitation about it, but that she thought of herself formerly as pretty but now as homely.

(19) Axe—Third. 1.4 seconds. Misunderstood this word, thinking it was book of Acts in the Bible. "I wonder why I said that. This chapter refers to the man."

(20) Bed—Couch. 1.8 seconds.

(21) Round—Slender. 1.6 seconds. She refused an explanation, but it is significant that a series of reactions in succession (7), two of which are the above, appear to have a decidedly erotic coloring.

(22) To visit—Yes. 3.6 seconds. No explanation, but it probably referred to a visit that she paid to a former pastor—the one to whom she said she was now married, when he was living in a distant city. He was an unmarried man at this time and lived with his sister.

(23) Danger—Thigh. 2.6 seconds. "When I was carrying my child I had considerable pain (pointing to the left side of her abdomen). I was very sick one day and I wondered if it was more dangerous than I then thought."

(24) God—Man. 2 seconds. "I don't know why I thought of it. Mr. S. was a very manly man. He was weak in some ways—too easily influenced." She then went on to tell about his brother and the fact that the brother was not good to her and finished by speaking of her cousin, the man who was studying for the ministry, who lived at her house for some months, and who was requested to leave by her mother on account of her apparent fondness for him.

(25) Protection—Sigh. 2.4 seconds. "One of our clergymen (the one to whom she said she was married when she was at Brigham Hall), said, 'Oh, Mrs. S., your sighs break me all up.'"

(26) Carpet—Fellow. 1.6 seconds. Spoke of rugs in her house that she used to clean and said, "When I visited Mr. C. (the one now married to) he said, "Your way

has been rough and rugged." An effort was here made to draw her out concerning him and their marriage. This was largely unsuccessful. "I have nothing more to say on that subject, nothing more. I refuse to commit myself on that subject any more. It is my business, not yours. You ought not to ask me such questions. I have seen Mr. C. since I have been here. He came to take me out. We won't discuss this subject." She finally acknowledged that they were married,—a "divine marriage," but would give no further information concerning it.

(27) Ashamed—I am not. 2.4 seconds. "I think there was more or less gossip concerning that cousin of mine studying for the ministry. He roomed at the house. I have felt that I should not have allowed him to come there."

(28) Jealous—Antipathy. 2.6 seconds. Spoke of a man who used to sing in the same choir with her and was disagreeable to her.

(29) Boy—Girl. 1.4 seconds. Spoke of the sex of her child and said: "The doctor said it was a girl, while the nurse says it was a boy." At the time of her confinement she asked the doctor what the sex of the child was. He said to nurse, "What did she want?" Nurse answered, "Boy." He said, "It's a girl."

(30) Money—Contribute. 3 seconds. Denied any association, but it probably referred to her church work.

An anlaysis of these complex groups first brought out the history that her psychosis originated in the death of her child and that the illness and death of her husband resulted in her complete mental overthrow. Next that her erotic complex was of a secondary nature.

She was fond of children, and the loss of her child as well as the loss of her husband was a bad blow to her. Years afterward while interested in her church work she became acquainted with a boy who was then at the same age as her own child had it lived. She studied this boy. "He was like my father's family. He was like me. Why should this woman (who claimed to be the boy's mother) have a child that so much resembled me." Evidently hallucinations developed of hearing and she misinterpreted various things that were said and she finally came to the firm belief that the child was her own and was kept from her in order that she might not have an heir. This illustrated wish fulfillment

During the winter following the death of her husband, "I used to sit by the fire and weep. The people at that time got me interested in church work and I used to go to church and pray. Mr. S. and I built the church (they contributed not only money but labor to a considerable extent in the building of the church). I couldn't go to church very much at that time. I got a good deal of help in that way."

Her seeking advice and comfort from the pastor of the church, her own church work and relations which was with her an obsession, was probably symbolic of what her home life would have been had her husband lived. An inordinate fondness for the pastor developed which became so apparent that her mother spoke to the minister concerning it.

Shortly after she was sent to Brigham Hall and there gave expression to the statement that the minister was her husband. After her return home her obsession continued and her mother remarked that she was unusually fond of men's company. She became much attached to the various pastors of the church; invited a cousin who was studying for the ministry to visit her mother and herself, he remaining there for some months. Her attitude toward this cousin became such as to create gossip and her mother finally had to request him to leave.

When one of the pastors of the church left to take up his duties elsewhere she went to visit him (he was an unmarried man, living with his sister), and this same man was the one that she stated was her present husband.

The associations other than those referred to above did not appear to show any complex relating to her psychosis except as to her confinement in the hospital.

Case II.—E. R., female; single; twenty-three years of age; admitted to the hospital June 17, 1908. Maternal grandfather, maternal uncle, maternal cousin—insane; mother living, nervous; father living, nervous, alcoholic.

Personal history: Patient was normal at birth; had had measles and whooping cough as a child; began school at seven, continued until fourteen; finished seventh grade. Was as bright as the average, but was nervous and headstrong; difficult to control. Menstruation began at fifteen, since which time her nervousness was more pronounced and was more headstrong. She was fond of playing with other children until between sixteen and seventeen years old, when erotic tendencies developed; became pregnant and had an abortion performed upon her. At this time she gave expression to peculiar sayings, was more seclusive, and her mother thought her mind was affected. In December, 1907, she was stupid, slept much, but wanted to go to the theatre, and when there paid no attention to what was going on; was unable to tell afterward what she saw. This condition lasted about two months or until the early part of 1908, when she became more active than usual; wanted to be "on the go"—to be out all the while; was fickle minded; frequented questionable resorts, and on one or two occasions was arrested because of intoxication and immoral conduct.

In the spring of the year while in a water closet, her mother heard her scream and when asked what was the cause, said that she had seen her aunt (dead two years) standing before her, dressed in a red silk waist.

She was a good worker while at home, was neat and tidy in her dress and work until March, 1908, when she became somewhat slovenly in her appearance and work. During the winter of 1907-8, while in her depressed condition, attempted to take carbolic acid, saying she was worried over her mother because she worked so hard. After that she threatened suicide many times, and about two weeks before admission attempted to jump into the river. When her mother endeavored to correct her as to her conduct she used to become very angry, and was extremely resistive and destructive of clothing and furniture. About a month before her admission she became tidier in her personal appearance; was inclined to be vain; would admire herself in the mirror; laugh in a silly manner, and suffered from both auditory and visual hallucinations.

During the early part of her residence here she was pleasant and agreeable, at times inclined to be flippant in her remarks; showed no confusion; reacted to hallucinations; was childish and emotional; had delusions of a persecutory nature; was disoriented for time; memory was fair excepting for dates; retention fair; was lacking in insight. She became considerably upset mentally without any apparent cause in September, 1908; was restless, irritable, markedly confused, noisy; appeared to have no appreciation of where she was or what she was doing; was destructive of her clothing; would throw herself on the floor; expose her person; was wet and soiled and was extremely resistive, at times to the point of violence.

This condition continued for between four and five months, since which time she became quieter, more pleasant and agreeable, and again became oriented but was more childish and forgetful than she was previous to this period of excitement. After her recovery from this excitement she was questioned as to why she acted as she did, but she was unable to give any explanation. She remembered that she would throw herself on the floor and that she was placed under a protection sheet, but had no recollection of destroying her clothing, exposing her person, wetting and soiling herself, etc.

In making the association test, 100 words were used. She cooperated to the best of her ability, but her reactions were unusually long, the shortest being 1.1 seconds, the longest 20.8 seconds, with an average of 4.17 seconds. The number of reactions above this average was twenty-six. Taking the average of two and a half, there were seventy-four in which the reaction time was above this average. Number of positive reproductions seventeen.

The complexes brought out were:—

First: an unhappy experience which she had at the age of twelve.

Unfair—people. 9.8 seconds. "When I was twelve years old I was in a school and the teacher used to scold me a great deal. One day just because I wasn't able to study, she whipped me. I went home after that; was sick in bed for three or four days. I don't think that that was right."

Again, at the age of fifteen, she was frightened.

To frighten—to bark. 18.8 seconds. "A dog frightened me by barking at me, and I was sick for two or three days. He tried to bite me," and she went on to say that she had disliked dogs ever since. She described this dog

as being a large dog—"It was a sort of bulldog with large ears, brown and white," and went on to say that she had been afraid of dogs ever since, particularly large dogs.

To whistle—To bark. 4.2 seconds. Spoke of a dog barking every time he heard any one whistle.

To kill—Dog. 2.4 seconds. Again spoke of a dog that was ugly and had to be killed. "He didn't bit me, but grabbed at me."

It was worthy of note that this fright in connection with the dog took place about the time she began to menstruate.

Her father was an alcoholic and she said he used to come home intoxicated and abuse his family.

To scold—Children. 5.4 seconds. "Children have to be scolded a good deal. I was scolded a great deal by my father and there generally was no use for it."

To punish—"Why, I don't know that one." 18 seconds. In explanation she said that she was thinking of what she had undergone in a previous examination as to her associations, and then said, "I was punished by my father when I was bad."

Protection—Man. 3.8 seconds. "I was thinking of my father."

The associations referring to her past conduct, particularly those of an erotic nature, were as follows:—

Beer—Water. 3.8 seconds. "I never drank any beer; used to drink ale sometimes." Denied ever having been intoxicated, but on previous questioning admitted having been intoxicated on several occasions.

Gay—Woman. 9.2 seconds. "I was thinking of some women down town who were gay."

To pray—Meeting. 5.2 seconds. "I was thinking of prayer meeting."

After considerable questioning we learned that following the abortion performed upon her when she was about sixteen, she was severely chastised by her parents, and for a time thereafter attended church and prayer meetings regularly.

Ashamed—Something. 3.6 seconds. She says she thought of herself and that she was ashamed of some things she had done.

Shows—Door. 6 seconds. "The doors that go in where the shows are; the Stone, the Armory (two theaters)."

Baby—Child. 3.8 second. "I like children awfully well," and spoke of one who lives near her mother.

Bank—Road. 4.2 seconds. This reminded her of the bank along which the street cars run in coming to the hospital. Previous to her admission she used to come up to the hospital and go out walking with one of the male attendants, and it was altogether likely that she used to sit along this bank with him, since this was frequently done by visitors from the city who made the hospital grounds sort of a park.

Jealous—People. 3.8 seconds. She was thinking of some girls whom she used to know and who were jealous of her because she would not go around with them. "They told lies about me."

Police—"Don't know that." 20.8 seconds. "I was going to say 'store.' I used to see policemen around the store a lot. I used to run away a lot and the police would catch me, buy me candy at the store, then keep me at the station until my people came for me. The policeman that arrested me was in plain clothes. He pinched my arm."

Resort—Shows. 7.4 seconds. Said she visited her uncle in Syracuse when she was nineteen years old and used to go to various shows at the resorts along the lake.

Love—Picture. 2.8 seconds. Said she thought of a picture that her mother has at home, entitled "The Lovers."

Mean—Woman. 3.2 seconds. Bad women.

Protection—Girl. 4 seconds. "A girl sometimes needs protection."

Evil—Things that you do wrong. 4.2 seconds. There was no explanation, but probably referred to her own past conduct.

To frighten—People. 5.8 seconds. Said that when she was seventeen years old there was a conflagration near where she was living with her parents, and it was feared their house might catch fire; as a result of which she was extremely frightened.

Many of the remaining associations referred to complexes of more recent development or to things that had occurred at home during her visits there while a patient here.

Fruit—Vegetables. 3 seconds. "I was thinking of vegetables I have seen in a man's garden next door to where my mother lives."

Soil—Waist. 4.4 seconds. She was thinking of a waist that she wore while visiting her mother, a month or so ago. She spilled some salad dressing on it.

Apple—Skins. 3.4 seconds.

Fruit—Picture. 5 seconds. This recalled to her mind a picture in her mother's house, containing all kinds of fruit.

Paper—Water. 4.2 seconds. "Where I worked the lady made me put papers under the pitchers or glasses of water, to keep from marking the table."

To visit—Come and see. 14.4 seconds. Said that her uncle was going to visit them—to come and see them.

Angel—Pear. 5.2 seconds.

God—Picture. 4.6 seconds. These referred to a picture that her mother had at home, of an angel surrounded by fruit.

The following associations referred to a burn that she received on her arm a day or two before the association tests were made.

Eye—Arm. 3 seconds.

Head—Arm. 3.8 seconds.

Operation—Arm. 5 seconds.

Pain—Arm. 2.2 seconds.

In summarizing this test it will be seen that the first experience brought out was when she was twelve years old and refers to trouble she had when in school. This was the only association connected with that incident.

The second complex group referred to her receiving a fright at the age when she began to menstruate. To this group belonged three associations. While this was not a large number, yet in each one she spoke of the dog above mentioned. She described the affair in detail; remembered even the markings of the dog that attacked her, and her sensations at the time, and it was evident that the experience made a lasting impression on her.

The next complex group referred to the treatment she received at home, particularly at the hands of her father, who was frequently intoxicated, and when in this condition, was abusive to his family. To this group also belonged three associations.

The largest number of associations referring to one complex group were those of an erotic nature which first made their appearance almost immediately after the fright which she received at the age of fifteen. I would again call attention to the fact that this occurred at the time of the onset of her menstrual periods. It appeared to us that this erotic complex group was secondary to the fright complex group.

Her remaining associations referred to complexes of more recent development and had no bearing on her psychosis.

ATONY OF THE STOMACH.

By J. W. Weinstein, M. D.,
New York,

Synonyms: Myasthenia gastrica; motor insufficiency, first degree.

(*Concluded from page 357.*)

Diagnosis. This is easily established by giving the patient a regular dinner and washing out the stomach seven hours later. If food is present the diagnosis is made. We must, however, keep in mind some facts that will be pointed out under:

Differential Diagnosis. It was the endeavor of the author to impress upon the mind of the reader that a stomach with normal motility must empty itself of a regular dinner in seven hours. However, if food is found in seven hours after a meal, one should not jump immediately at the conclusion that the case is necessarily one of atony. In making the differential diagnosis pyloric obstruction stands foremost. A stomach that shows food seven hours after

a meal is just as likely to be one of obstruction of the pylorus. When the outlet of the stomach is blocked up, the food naturally cannot go through as in normal cases. The following points serve to differentiate the two conditions. By inspection: If we notice peristaltic movements in the region of the stomach, movements from left to right which are the expression of an endeavor of the muscle wall of the stomach to push through the food through a narrowed lumen—the diagnosis of pyloric obstruction is established. That stasis, therefore, is not one of atony. There is only one other condition that gives peristaltic movements of the stomach and that is an hour glass contraction of the stomach. However, while these movements are pathognomonic of pyloric obstruction or hourglass stomach, their absence does not rule out by any means these two conditions. A very much dilated stomach means again an obstruction at the pylorus and not atony. I am very well aware that some authors state that atony is likely to lead to extensive dilatations of the stomach. I take exception to this opinion and consider them cases of mistaken identity. I think that they were obstruction cases and not atonic cases. I personally have never seen marked dilatation anywhere but in obstruction cases. Acute dilatations to a marked extent are common, however, as a result of mere relaxation of the muscle without any obstruction at the outlet.

By palpation: If we can feel the pylorus the case is one of pyloric obstruction and not atony. A normal pylorus is not palpable. Any pylorus that can be felt means one that is infiltrated with either tumor tissue, scar tissue, or an hypertrophy of its own tissue, what is known as an hypertrophied pylorus. Such a pylorus has always a narrowed lumen. There is, however, one source of error in this connection to be guarded against, namely, pylorospasm. A pylorus very often gets into a state of spasm. It becomes palpable under the examining finger. This, however, does not mean obstruction. To obviate this difficulty in diagnosis we must remember that in pylorospasm we may feel the pylorus at one examination, but we will not feel it at other examinations. Pylorospasm is often brought about by hyperacidity. Case IV of my series showed it twice and kept me for a while worrying, that it might be a case of pyloric stenosis, as there were a good many other features that pointed that way. In the absence of peristaltic movements, palpable pylorus, and large dilatation, for the differential diagnosis of pyloric obstruction and atony we turn to the examination of the food residue. The presence of a small amount of food seven hours after a dinner means nothing but atony. In case a large quantity of food is found, we tell the patient to have a regular dinner in the evening and come the next morning on an empty stomach. The finding of no food or but little food, means atony. The presence of a large quantity of food, especially if it is of foul odor and in a state of decomposition, means a pyloric obstruction. The presence of a large quantity of decomposed food fifteen or more hours after a meal means pyloric obstruction.

The presence of sarcinæ ventriculi means in most of the cases a benign obstruction of the pylorus. It is sometimes met with in marked cases of atony. Sarcinæ mean a marked stasis of food. By following up these laid down facts there will be no difficulty in differentiating atony from pyloric obstruction. Here and there we shall occasionally meet, so to say, with borderland cases, cases of severe atony, where the diagnosis between obstruction and atony will be impossible. I let in such cases the treatment decide the nature of the case. If the case does not yield to the treatment for atony, I advise operative interference, which is the treatment for obstruction. Fortunately these cases are very rare.

Hourglass contraction of the stomach. It is a condition which is the result of an ulcer. The scar contracts and the stomach is divided into two chambers that communicate with each other through a more or less marked aperture. It presents most of the features of pyloric obstruction, including stasis. The following is the way to diagnosticate it from atony and also from pyloric obstruction. The patient is given, preferably on an empty stomach, some raisins or figs. A couple of hours later the stomach is washed out very clean, so that all the seeds have been washed out. The patient then walks around, shakes himself well up, lies down so as to change his position, and after about one half or one hour we wash out the stomach again. In the presence of an hourglass stomach seeds will show again in the wash water. The rationale of this diagnostic method is as follows: The stomach is divided into two chambers. The seeds are easily recognized by the eye. In washing out the stomach the tube always enters one and the same chamber. Some seeds, therefore, remain in the second chamber which through the contractions of the stomach regurgitate into the first chamber and are then washed out by the second lavage. This is the only class of cases where I use raisins or figs, but never as a mere test for stasis.

Carcinoma of the pylorus. Same as for pyloric obstruction. Carcinoma of the body of the stomach is apt to be mistaken for atony. For a cancer in any part of the stomach is associated with impaired motility of the stomach. The distinction between the two, however, will seldom be difficult. The mode of onset of cancer is different. There is usually an abrupt onset of the disease, while in atony the onset is much more gradual and apt to be of standing of years. The loss of all appetite, the steady, progressive loss of flesh and strength, the vomiting of melæna, the aversion to meat are not seen in atony. Finally, the examination of the stomach contents in gross, microscopical and chemical examination presents a different picture altogether. In gross the contents are very thick, often of fœtid odor, the bread is very poorly digested. Microscopically, large numbers of cellular elements, some mucus, and presence of Boas-Oppler bacilli. Chemically, absence of free hydrochloric acid and presence of lactic acid are features of cancer and never of atony.

Sources of error in diagnosis. Some patients, especially those that diet themselves a good deal, whose stomachs are washed out seven hours after a meal with the result of finding food in the stomach, may at the next examination under the same identical conditions not show any food at all. The mistake, however, is soon obviated, since the treatment

consists, as will be pointed out later, in washing the stomach seven hours after a meal. Atony is at times the result and not the cause of other diseased conditions; such as some intestinal trouble or neurasthenia. This mistake is also soon found out, as we correct the atony in short order, while the original neurasthenia, etc., persists.

Treatment. The treatment will best be understood and outlined by dividing the cases into three arbitrary classes; mild cases, moderately severe, and severe cases. The severity of the condition is not to be judged by the severity of the symptoms, but by the quantity of the residual food. By mild cases I understand that class of patients in which we find seven hours after a meal, but a small quantity of food. By moderately severe cases I understand those cases, where there is quite considerable food present seven hours after a meal, but where but little food is found in the morning on an empty stomach with a regular dinner the evening before. The severe cases are those that show quite an abundance of food in the morning on an empty stomach, the patient having partaken of a regular dinner the evening before. These classes at times merge one into another; thus, a mild case may resist treatment and then the treatment for the moderately severe cases is instituted. In the same way a moderately severe case may readily yield to treatment and the treatment of the milder cases only is carried out. The treatment in each instance is divided into prophylactic, dietetic, mechanical, and medicinal.

Treatment of mild cases. Prophylactic. Correct all bad habits of the patient. The teeth should be examined. If the teeth are in bad shape or patient misses a lot of teeth, the patient should be referred to a dentist. Good teeth are essential to good digestion. In absence of teeth the stomach is called upon to grind and comminute the food which means to take the place of the teeth. The pernicious effects on the stomach are apparent. If the teeth are found to be in good shape we must inquire whether the patient masticates his food thoroughly. A good many people neglect this important function and are as bad off as people without teeth. If patient is a heavy smoker he should quit it entirely or reduce his smoking. Alcohol should be interdicted. It was shown by von Mehring (22) that ingestion of alcohol caused a secretion of water into the stomach. Large quantities of water, as will be pointed out later, are bad for the atonic stomach. Although Klemperer (23) states that small quantities of alcohol stimulate the motility of the stomach, it had better be cut out. Beer may be taken in moderation only. I think one or two glasses a day should be the limit. If patient is allowed to take two glasses it should not be at the same time. The patient should be instructed to chew the food well. Extremes of temperature, very hot and very cold food should be interdicted. Overfeeding, especially ingestion of much liquid at a time, should be prohibited.

Dietetics. There is one standard rule in motor insufficiency, to give the meals in small quantities at more frequent intervals with the idea that it is much easier for a weak stomach to digest a small meal than a big meal and, therefore, all writers put down as the first maxim to feed these patients every two or three hours. I believe, however, in the golden rule, to attain the maximum result with the minimum of exertion and disturbance to the patient. To order a patient to eat every two or three hours is very easy for the physician to do. It is, however, very difficult for the patient to accomplish it. It should not be forgotten that the vast majority of these patients are not invalids, they are not hospital patients. They are people who attend to their daily pursuits and even enjoy life, but they suffer from certain unpleasant gastric effects. The business pursuits of the American business man, clerk, or working man are such as not to allow him to think every two or three hours of his health and to take a meal, and such orders will undoubtedly be disregarded. Should the physician insist on it, the patient will get disgusted and go off to someone else. I have, therefore, in all the mild cases digressed from this cardinal rule and allow the patients to have their regular three meals a day. Should, however, a case prove to be very obstinate and not yielding to treatment, the patient must take greater precautions and make greater sacrifices and be put on the small meals frequently repeated plan. The patient, therefore, is allowed to go on with his ordinary three meals a day. He should be given as nutritious a diet as possible. He may eat bread, potatoes, preferably mashed, cereals, eggs, fish, and meats. Meat as well as fish that is fried in fat, stays much longer in the stomach and they should be forbidden. The meat should be of the tender kinds, such as steak, lamb chops, and poultry. The white meats are easier of digestion than red meats. The meats may be cooked—stewed, broiled, or roasted, but not fried in fat. Meats of young animals are preferable. Of poultry the skin and tendons should be avoided. Meats in finely divided form, such as scraped beef, hashed, or finely chopped, are very good. Vegetables, as a rule, are not good. Especially the leaves of vegetables are very bad. In washing of the stomach they are the ones that are left behind. If vegetables are given at all, they should be very young ones and be very finely divided. Fruits raw are not very good in those cases of atony that are accompanied by excessive acidity and as a rule, most of them are. Stewed fruit and baked apples are permissible. Here again the greatest care should be taken to exclude the skins and seeds of all fruits and berries, as they stay long in the stomach. The quantity of liquid taken at a time should be invariably small. One pint at a time should be the limit. One half a pint is to be preferred. All greasy and fatty foods should be interdicted. Butter and sweet cream are the only fats permissible. Highly seasoned foods, condiments, and spices are not very good on account of the accompanying excessive acidity, though in some cases where the acidity is not high, they may be given.

Mechanical treatment. This consists in lavage. Washing the stomach is of inestimable value in atony. The in and out flow of the water serves as an excellent tonic to the stomach. There is no class of gastric diseases where lavage brings such brilliant results as in atony. The water should be lukewarm. I tried cold water, but it does not agree with the patients. I find that the addition of an al-

kali is very good indeed. I use sodium bicarbonate. I add about from four to five tablespoonfuls to about three quarts of water. One may add even more. All the food found should be thoroughly removed without leaving the least traces behind. I use with good effect also a stomach douche. This consists in using a tube with a lot of little openings at the end—a Rosenheim tube. The water is then put in under considerable pressure by raising the funnel rather high. The Rosenheim tube should be used only after all the food particles have been removed. The stomach should be washed about seven hours after a meal. The best time to do that is to have the patient take his midday meal at 12 m. and then wash his stomach at 7 p. m., before the patient had his supper. The patient must not eat anything in the interval. He has his supper after the lavage. It should be done between two and three times a week for a couple of weeks and as improvement follows, it is reduced to one washing a week. By employing this plan we can very nicely follow up the progress of the disease, as we see the residual food gradually diminished in quantity to finally disappear altogether. Simultaneously with this we note a gradual improvement in the symptoms of the patient. When the stomach shows no more food seven hours after a meal the patient is cured.

Medicinal treatment. This plays a small rôle in atony. One would naturally turn his mind at once to strychnine. As a matter of fact it is a total failure. I have used it in doses of 1/30 grain and smaller. For a time I abandoned it altogether. Lately I conceived testing the value of big doses and prescribed 1/15 grain three times a day; the effect is dubious. I have not tried it yet in a sufficient number of cases to warrant a positive assertion. The drug that is quite of some value in atony is calcined magnesia. I prescribe it in powders in doses of from twenty to thirty grains three times a day, about one hour after meals to be taken in water. The great value of this drug consists in its alkalinizing and laxative properties, since most of these patients suffer with both excessive acidity and constipation. In other cases, where constipation is no element, I prescribe sodium bicarbonate in half teaspoonful doses in water, three times a day, one hour after meals. Sometimes a combination of the two is preferable.

℞ Magnesium oxide, . . }
Sodium bicarbonate, } ..... āā gr. xv.
M. Fiat pulv. No. 1.

Sig.: One powder in water, three times a day, an hour after meals.

The extract of belladonna in doses of one quarter grain is often added to the calcined magnesia with great advantage, as it diminishes the reactionary oversecretion which often follows the administration of an alkali. Where pain is a prominent factor the belladonna serves a double purpose of relieving the pain as well. Atropine sulphate in doses of 1/100 grain may be used instead of the extract of belladonna for the same purpose.

Treatment of moderately severe cases. Under this heading come those patients that show considerable food seven hours after a meal. There may or may not be a slight amount of food in the morning on an empty stomach with a meal the evening before. Here belong also those cases of the milder variety which nevertheless resist treatment. The lavage should be instituted more often about three to five times a week. Where expense is no object daily lavage would be still better. In addition the stomach should be massaged after the lavage. In case this treatment does not bring the desired results, in most of the cases it does, we must put the patient on the small meals frequently repeated plan. The patient should eat every two and one half or three hours correspondingly smaller meals at the time, the total to correspond to the average number of calories required for him. Should this plan happen to fail to cure the patient I put him on a two meal plan a day. This method is a very rational and a good one indeed. The patient has his breakfast in the morning and his lunch about 12 or 1 p. m. The stomach is washed out seven hours later and the patient goes without supper. The rationale of this method of treatment consists in the perfect rest that the stomach enjoys under this treatment for about twelve or thirteen hours from the time of the lavage till the next morning. For whenever there is food in the stomach, the latter keeps on working over it grinding, churning, and pouring out secretion. If, however, we thoroughly wash out the stomach in the evening and no supper is ingested afterward, the stomach enjoys a perfect rest for about from twelve to thirteen hours and thus has a chance to recuperate and regain its tone again. I have succeeded recently in curing up by this method a very rebellious and marked case of atony with considerable stasis of food and marked dilatation. By using this plan for one month twice weekly, I discharged the patient without any stasis of food whatsoever and with actual diminution in the size of the stomach. This patient had been treated by me by means of the other methods for nine weeks, but I could not dispose of the stasis and dilatation completely until this plan had been resorted to. The patient should also be instructed to lie down after meals on his right side. This brings the food against the pylorus and the exit of the food is obviously accelerated.

The medicinal and other remedies are the same as for the mild cases.

Treatment of severe cases. These are the cases where we find a very large quantity of food in the evening and on testing on an empty stomach in the morning after a supper on the previous night we find a goodly quantity of food. Dilatation of the stomach is present in most of such cases. They are borderland cases. We are often puzzled whether or not they are pyloric obstruction cases, and at first there may be some difficulty in deciding it. To this class belong also some cases of the less severe grades, but which did not yield to our methods of treatment. Patients of this group should be put to bed for about a week on a fluid diet. I give them nothing but fluids in moderate quantities for one week. Milk, zoolak, beef tea, meat juice, bouillon at intervals of from two and one half to three hours. The rest in bed with the fluid diet aids materially in the restoration of the lost tone of the stomach. After the week is over the same treatment as for the moderately severe cases should be carried out. Either the two meals a day with the evening lavage or the small meals frequently repeated plan should be carried out. The patient should lie down on his

right side after each meal and all the directions should be rigorously carried out. Should a case prove so obstinate as to baffle all the former plans of treatment, we may resort to rectal feeding for about one week to ten days and then start with the administration of the most digestible foodstuffs training up the stomach. In other words to carry out a regular von Leube ulcer cure. There is no doubt that the rest given thus to the stomach would yield very salubrious results to an atonic stomach. I personally never had occasion to do that yet, having cured the patients without resorting to it.

Treatment of special symptoms. Of these constipation is often met with. We remedy this by ordering a glass of water in the morning before breakfast, oatmeal as a part of the breakfast; one or two glasses of buttermilk during the day; walking, cultivating a habit of going regularly to toilet.

If medicines are to be resorted to, the calcined magnesia, as pointed out before, is good. Phenolphthalein is an elegant drug for constipation. It is best given in tablet form of about half a grain each, morning and evening. Even two at a time or more may be given, if necessary. The fluid extract of cascara sagrada at bed time is good. It may be given in twenty minim doses with some syrup three times a day. The aloes, belladonna, and strychnine in pill form may also be employed to advantage. Should the case prove to be a very severe type of constipation, one of those in which the patient had used for years all kinds of drugs, all medicines should be suspended, and the case be treated by diet as outlined before, and the administration of Fleiner's treatment. One to one and a half glasses of warm olive oil or sweet oil is to be injected from a fountain syringe into the rectum, preferably through a rectal tube. The patient lies down with the buttocks on a higher level than the head and the injection is made. The patient is to remain for from one half to one hour in this position afterward. The injection is made daily or every other day. The injection is not followed by an immediate movement. The movement comes on several hours later spontaneously or may be brought about by an injection of soapsuds with water, if it does not come on spontaneously.

Loss of appetite. As a rule the appetite improves under the regular treatment for the atony. We may help it along by giving in cases of low acidity or anacidity:

℞ Diluted muriatic acid, ...15.00 grammes;
Pepsin (Fairchild), ...10.00 grammes;
Glycerin, ...15.00 grammes;
Peppermint water, ...ad 60.00 grammes.

M. Sig.: One teaspoonful in one half glass of water three times a day before meals.

If acidity is normal or high we may give:

℞ Fluidextract of condurango, ...25.00;
Tincture of nux vomica, ...10.00;
Tincture of cinchona, ...10.00;
Elixir of gentian, ...60.00.

M. Sig.: One teaspoonful three times a day before meals.

Some patients with atony who happen to be also anæmic and underfed, are benefited by the administration of tonics such as various combinations of iron, strychnine, arsenic, etc.

Results. These are very satisfactory, indeed. I think it is one of those few diseases where the physician vies in his results with those of the surgeon. I have cured all patients with very few exceptions, who have given me a fair chance. We can promise a cure in from two to twelve weeks.

My description of treatment makes it evident that washing the stomach is an important factor in the treatment of atony. I feel, in order that any other physician is to get the same uniform favorable results like myself, he is to perform the lavage in the proper manner, and I shall not consider my treatise complete without giving succinctly some rules for the proper performance of lavage. Washing the stomach is usually considered a very simple procedure. As a matter of fact, in order to clean out a stomach thoroughly it takes considerable experience. The inexperienced is very prone to wash out the stomach by merely putting the water in and decanting it off, and leaving the food residue behind in the same manner, as the tyro is apt to perform a curettage and leaving the fœtus behind. By leaving the food behind we refute the very object that we are after.

The patient must never be tortured in the process of washing. If he gets short of breath the tube should be removed and after giving the patient some rest it should be reintroduced. The patient should be instructed to breathe all the time, while the tube is in the stomach. This obviates suffering on the part of the patient. The patient should keep on from time to time to spit out the saliva that accumulates in his mouth. After the stomach tube is introduced to its proper distance within the stomach, the patient should hold the tube with two fingers near the mouth without compressing it. He should be instructed not to move the tube in the least. Any movement of the tube in or out is followed by immediate gagging. The saliva, unless spit out, also causes gagging. The stomach tube should be a soft one. It should not be thick, 30 French, no thicker. It should have two eyes at the side. A third one at the end is perhaps preferred. The stomach tube should be connected with a very stiff bulb for suction. Any man who approaches to wash a stomach without a good intervening bulb does not know how to wash a stomach. The bulb is best connected by means of two glass connecting tubes. The tube should be introduced not less than twenty-three inches. In some tall people even twenty-six or twenty-seven inches is necessary, for the food in the latter part of digestion is in the pyloric part, and the tube should be introduced there. If no food is forthcoming other levels should be tried, both deeper and more superficial ones, and the bulb is used every time as a siphon. Should the food not come out by itself, then the bulb is used to stir up the food contents within the stomach. The patient should be instructed to shake himself up vigorously from time to time and this facilitates considerably the removal of all the food. No more than a pint of water at a time should be put into the stomach. No fresh water should be added, until we are certain that the former pint has all flowed out. When finally all the food has been absolutely removed and no more water is flowing out of the stomach, the patient should be put on a couch and vigorous splashing should be employed to test whether any water has been left *in situ*. If so the stomach tube should be reintroduced. One of the

gravest mistakes is to overdistend the stomach with water. To leave water or food behind, from previous considerations, would mean to defeat the whole object of our treatment, especially when the two meal a day plan is carried out, and we want to give the stomach a rest for the night. The practice of giving a stomach tube to the patient for autolavage should be condemned. I assure the reader that it is a very difficult task, requiring considerable experience, to thoroughly cleanse an atonic stomach. Fortunately, there is one compensation, namely, that practice makes perfect.

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DIPHTHERIA BACILLI CARRIERS.*

By William G. Bissell, M. D.,
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The subject presented has suggested itself on account of the difficulties that have arisen in the endeavors of the Health Department of this city to prevent a possible epidemic of diphtheria. It has been known for many years that persons physically well are capable and many times do carry diphtheria bacilli in the secretions of the throat and nose. It has but recently been actually demonstrated by an experience occurring in this city that domestic animals are also capable of carrying diphtheria bacilli in a like manner. During the winter months of this year a dog owned by students living in a fraternity house did not act in its usual manner and upon investigation seemed to be afflicted with a soreness of the throat. The students more in a joke than otherwise made a culture from the throat and its examination revealed the presence of the Klebs-Loefler diphtheria bacillus. The students reported the matter to the Department of Health, considering it a great joke. The Department in turn made cultures from each and every person of the household with the result of finding Klebs-Loefler diphtheria bacilli in the throat secretion of one of the students, who was physically well. Careful inquiry elicited the fact that this student was substituting as an interne in the contagious pavilion at the Buffalo General Hospital. It would seem most probable that the infection in this instance was transmitted by the student from the hospital to the dog.

During the past fifteen years many instances of the presence of a considerable number of cases of diphtheria have occurred in various public institutions such as the orphan asylum, the Children's Hospital, the Erie County Hospital, the public schools, etc. It is the custom of the department in such instances to take swabbings and make cultures from all persons associated in the infected area; and it has been the experience in most every instance anywhere from five to twenty per cent. of the cultures examined would show the presence of diphtheria bacilli, and yet the persons from whom the cultures were taken were physically well. The question has arisen, were the bacilli virulent and capable of transmitting the infection. In one investigation several years ago it was decided to allow such teachers that produced cultures that when the organisms were tested on guineapigs and found not to have the strength of producing illness in the pig so tested, that they were permitted to return to their school duties. The result in this instance was most unpleasant, for there immediately occurred a recontinuance of the disease in this school, the cause for which the writer will endeavor to express his opinion. The matter of virulence of a bacterial organism, or, in other words, its power to infect is a relative quantity. An organism virulent in one case can be but slightly virulent or nonvirulent in another case. There are certain bacteria whose virulence can be reduced by experimental means and likewise recovered. If this is true with organisms like anthrax, why is it not possible with an organism like diphtheria? At the present time the conditions governing the reestablishment of virulence of the diphtheria organism are not known.

Within the past few weeks the medical school examiner of a certain district while making his daily rounds noticed that several of the children in a kindergarten division of the school had discharges from the nose. As there were several cases of diphtheria in this division the possibility of the presence of these discharges being due to diphtheria bacilli suggested itself, and the examiner took swabbings and made cultures, the examination of which proved the undoubted presence of the Klebs-Loefler diphtheria bacilli. The children aside from the nasal discharge were physically well, but they were put under quarantine.

The health commissioner then thought it advisa-

*Read before the Erie County Medical Society at Buffalo, New York, April 18, 1910.

ble that cultures should be made from all persons associated in this division of the school, with a result that at least twenty per cent. of the cultures so examined have revealed the presence of the diphtheria bacilli. The community has been up in arms on account of the quarantine instituted and it was suggested to test the strength of these organisms. With the experience before rehearsed of the school teachers who were allowed to return when the organism proved nonvirulent to guinea-pigs, it has been decided inadvisable to carry on this mode of procedure. In making swabbings for cultures but a very small portion of the locality, and particularly when the material comes from the nose, is covered in collecting the material. It is possible by this means to obtain only those organisms that are on the surface, and as I have stated that virulence is a variable quantity, it may be that only those organisms collected from the surface are of the less virulent type, whereas those in the deeper portions or in other parts have full infective strength, and it is my opinion that this is the explanation for the experience in the cases of the school teachers. At the time of endeavoring to stamp out diphtheria in an institution the only safe way of getting rid of the infection is to quarantine all persons in whom the diphtheria bacillus is present and in no way allow this procedure to be varied by the matter of testing the virulence upon animals. Diphtheria bacilli carriers are unquestionably of more danger in transmitting clinical diphtheria than are those that are actually ill of the disease.

The Children's Hospital of this city has introduced as a routine procedure the taking of swabbings and making of cultures from every person received at the hospital. Not infrequently the diphtheria bacillus is found. This procedure was inaugurated as a routine measure so as to prevent the introduction of diphtheria infection in the hospital, as this manner of introducing the infection was the only possible means through which the presence of an epidemic some years ago could be explained. Every case entering the Contagious Hospital is likewise examined. In institutions the determining of the presence of diphtheria bacilli carriers is of the greatest importance in preventing epidemics of the disease in the institution.

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ANÆMIC ULCERS OF THE THROAT.

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New York.

Ulcers in the throat are either due to tuberculosis, syphilis, or angina Vincenti; and I would like to add a fourth cause, anæmia or lowered vitality.

Tuberculous ulcerations have a granular surface, ill defined edges with scanty secretion, which, together with other symptoms of tuberculosis, as cough, expectoration, night sweats, and examination of lungs and sputum leave no doubt for diagnosis.

Syphilitic ulcers have a deep and angry surface, sharply cut edges, and profuse purulent secretion.

In *angina Vincenti* we have a fœtid breath, often swelling of the lymphatic glands of the neck, and on the tonsils find a gray, dirty looking membrane resembling diphtheria, which after a while develops into a grayish looking ulcer. A bacteriological examination will reveal the fusiform bacilli described by Vincent and Plaut. Recovery will take place within a few days under treatment with potassium chloride.

The ulcer which I would like to call attention to occurs in anæmic individuals. I have only seen three cases, all in young women. The ulcer is round, small, with scanty secretion. There was no history of either tuberculosis or syphilis, and no swelling of the glands.

Case I. Miss D. C., twenty-two years of age, came to me June 30, 1903, complaining of pain in the throat which had lasted about five days. Upon examination I found a small, round ulcer on the left tonsil. The patient was very anæmic, but there was no history of either tuberculosis or syphilis, and the ulcer healed within a week under local applications of silver nitrate. I am sorry to state that the patient disappeared, and I have not seen her since.

Case II. Miss N. J., twenty-three years of age, nurse, came to my office in July, 1904, complaining of pain in the throat which had lasted for ten days. She had been in attendance on a severe case of typhoid fever for the last six weeks, where she had been on night duty, the patient having been delirious for the last three weeks, and had finally died. She was in a very nervous and debilitated condition. On examination I found a small round ulcer on the right tonsil. Naturally my first thought was syphilis, and I questioned her accordingly, but although she was perfectly willing to give me all information, and knowing the consequences of the disease she absolutely assured me that she had never had any previous trouble, nor could she account for her present illness. The ulcer disappeared after about a week or ten days under treatment with silver nitrate, and she has not had any trouble up to the present time, this being about six years ago.

Case III. Mrs. G. K., twenty-seven years of age, consulted me in July, 1905, complaining of pain in the throat for the last three weeks. On examination I found a small, round ulcer on the uvula. She was treated the same as the previous cases, but as this ulcer healed, other small ulcers appeared on the soft palate which disappeared entirely within about four weeks, and she had had no trouble up to 1908, about two and one half years later, and I have not seen her since. At the time these ulcers appeared she was in an anæmic and nervous condition.

Although I admit that these three cases are not conclusive evidence of anæmic ulcerations, it is sufficient to call them to the attention of the profession. If Cases II and III had been syphilitic I certainly should have been able to see some symptoms within six and two and one half years respectively, especially as neither one had taken any internal treatment during this time.

14 East Sixtieth Street.

Pellagra in Egypt.—Hughes says that pellagra has been the subject of a good deal of inquiry lately in Egypt. The question of attributing it to diseased maize has been much discussed. It is more common in the Delta than in Upper Egypt and is noticed more in the winter and spring months. The skin lesion is obvious and unmistakeable, but other symptoms of a nervous disease, excepting perhaps a slight increase of the knee jerk, are seldom seen among the younger population. A curious fact, too, is that although one member of the family may have a markedly pellagrous skin, the others are perfectly healthy. Anæmia is almost invariably associated with it. Hughes, from his observations, does not favor the theory of connecting the pellagrous skin with a nervous disease.—*Lancet*, July 16, 1910.

Our Readers' Discussions.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

CI.—How do you treat chronic nasal catarrh? (Closed August 15, 1910.)

CII.—How do you treat other electric shocks than that of lightning? (Answers due not later than September 15, 1910.)

CIII.—When can a pulmonary tuberculous patient be discharged as cured? (Answers due not later than October 15, 1910.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED*) that the answers be short; if practicable no one answer to contain more than six hundred words.*

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The prize of $25 for the best essay submitted in answer to question C has been awarded to Dr. Neil D. Graham, of Washington, D. C., whose article appears below.

PRIZE QUESTION C.

THE TREATMENT OF ŒDEMA OF THE LUNGS.

By NEIL D. GRAHAM, M. D.,
Washington, D. C.

Œdema of the lungs is necessarily associated with obstruction of the pulmonary circulation, together with a dilution of the blood plasma. This obstruction may be relative, actual, or both relative and actual. Relative in the cases where the heart is so weakened by the toxines of disease as to render it incapable of performing its duty; actual when the capillaries of the lungs are closed by an inflammatory process, or an uncompensated valvular lesion exists; or combined as in pneumonia for example. In any case the indication is to relieve the embarrassed heart.

In frank œdema the condition of the patient is grave, and rarely can stimulation whip the tired heart into an activity sufficiently forcible to overcome the obstruction. Venesection offers the most logical and rapid relief. The operation is simple. A bandage about the arm bound tightly enough to impede the venous circulation and bring the veins into prominence—the chosen spot painted with iodine, a sufficient antisepsis—the vein cut across with a clean razor. Simple pressure absolutely controls the flow. Sixteen, or more, ounces of blood may be allowed to escape. The benefit is marked immediately, especially in cases where cyanosis is deep. The general circulation is improved as the load on the heart is lightened, and coincidently a more rapid response to stimulation by mouth or hypodermically is obtained. Stimulants are now needed. In toxæmias, our most important aid is physiological salt solution. An amount equal to the amount of blood withdrawn may be introduced intravenously or subcutaneously, or, if no needle is at hand, twice this quantity by bowel, hot (from 100° to 110° F.). Salt solution has a direct action on the heart muscle, and a simple calculation shows this further benefit. There is a poison circulating in the blood, the toxine of the disease. Let its solution be represented by 100. Remove one eighth the total quantity of blood and substitute salt. The strength of the solution is now 87½. In other words one eighth of the poison is removed and the rest diluted. Salt also encourages diuresis—the natural method of elimination.

In nontoxic conditions salt is not indicated, but when there is a poison present, whether the result of bacterial activity or faulty metabolism, salt is useful.

If time is not too important depletion by catharsis (salines) may be substituted for venesection. It is undoubtedly less certain, slower, less controllable, and more depressing, but it may be effective. When used it is perhaps better later to administer salt by bowel by continuous irrigation through a catheter allowing the solution to flow slowly, i. e., drop by drop.

In general one must insist on 1. fresh air; 2. quiet; 3. protection from changes in temperature. The continuous use of such stimulants as strychnine, alcohol, digitalis, or oxygen depends on the physician's judgment of the needs of the patient, while the more fugitive but powerful and important aids—nitroglycerin and adrenalin—may be reserved for crises.

Œdema of the lungs discovered after death in such conditions as grave anæmias or cholera is coincident to dissolution, and cannot be treated as an entity. Prevention here lies in the proper handling of the disease.

THE NEW BERNE.

Dr. George B. Twitchell, of Cincinnati, Ohio, remarks:

But one word is needed to state the proper treatment of acute pulmonary œdema, and that one word is—phlebotomy.

Fabricius ab Aquapendente, the successor of Falloppio, teacher of anatomy and surgery at Padua, said in praise of the operation of bronchotomy, that the physician who performed this operation was like the god Æsculapius. Austin Flint said of venesection: "Perhaps under no other circumstances is it more apparent that the physician has saved the life of a patient than in certain cases of acute pulmonary œdema in which venesection was employed."

I present these two statements side by side, not so much to make prominent the life saving powers of venesection as to emphasize that in acute pulmonary œdema as truly as in stenosis of the glottis we are dealing with a mechanical condition to be overcome by mechanical means.

In acute pulmonary œdema the left ventricle has broken down, is partially paralyzed perhaps, the right ventricle keeps on working, pumping more and more blood into the already filled lungs, the patient becomes cyanotic, and without help usually dies.

Efforts to stimulate the left ventricle with hypodermic injection of ether or camphor are indicated of course, but relief is most urgently demanded

long before these drugs can act. Derivative measures such as purgation are slow and uncertain.

The one prompt and efficient way to overcome this condition is to reduce the quantity of blood that the right heart is continually receiving by opening a vein. The fact that the pulse is feeble is not a contraindication, for it must be remembered that while the right ventricle is pumping hard the left is weak or the œdema would not obtain. Unfortunately a definite rule as to the quantity of blood to be taken cannot be laid down. However, in these days when venesection is rarely practised, it may be well to warn the operator not to take too little. The behavior of the patient must be the guide in this as indeed it is in all active treatment.

An acute pulmonary œdema is not infrequently one of the terminal symptoms of a fatal acute or chronic disease. These cases are of course beyond help. Pulmonary œdema may be due to changes in the vessel walls as in renal disease; here we have to deal with a general rather than local condition. Inflammatory œdema bears no relation to the condition discussed in this paper; the same may be said of hypostatic pneumonia.

Dr. William Brady, of Elmira, N. Y., writes:

Prompt and, if necessary, heroic measures will frequently serve to rescue the victim of pulmonary œdema from imminent death. The condition is of sudden onset, and success in its management demands equipment other than a stethoscope and prescription pad in one's emergency bag when responding to a "C. Q. D." call in the middle of the night.

At the bedside one finds a sufferer from renal, cardiac, or arterial disease, pronounced anæmia, or a patient perhaps convalescing from one of the specific infections, in whom, within an hour or two, some alarming symptoms have developed: There is an anxious dyspnœa, a dusky skin covered with clammy sweat, cold extremities, a weak running or irregular pulse, and increasing stupor foreshadowing the approaching end. There may be feeble efforts at coughing with frothy, sometimes bloody, sputum appearing at the lips or nostrils. There is dullness extending upward from the bases and liquid râles are audible throughout the chest. Confronted with these unfavorable signs, we need not throw up our hands in despair; on the contrary, they mean that:

We must clear the room of frightened relatives, call for hot water bottles, and a foot tub, half full of hot mustard water, open wide the doors and windows, and despatch a responsible messenger for the nearest available tank of oxygen. We should place the patient in a sitting posture leaning slightly forward and well supported with backrest and pillows, in order to give the greatest play to the accessory muscles of respiration.

We may now administer a hypodermic injection of atropine sulphate (from 1/500 to 1/50 grain, depending on the bulk of the patient), to be immediately followed by a syringe full of camphorated sweet almond oil (5 grains in 20 minims). The feet should be placed in the hot foot bath, and the hot bottles covered with towels, about the bed next the patient's skin; warm blankets being wrapped about the patient. Artificial heat compensates the depression of the vital heart centres and prevents chilling during the repeated exposure incident to the treatment; the foot bath also exerts a derivative influence on the engorgement of the pulmonary capillaries.

Unless very decided improvement becomes evident at this time, we should remove from the median cephalic or the basilic—the basilic is more readily isolated, and the danger of wounding the artery beneath is inconsiderable—vein a pint of blood, more or less, according to the patient's bulk, general condition, and degree of cyanosis. The enormous increase of pressure in the lesser circulation is the chief factor in the pathology of œdema, and no other means at our disposal reduces the engorgement as well as venesection. If the case is very alarming the bleeding must be done before wasting precious time with the drugs or other measures mentioned. While the bleeding is in progress we may call for a dozen small cups or glasses, matches, and candle or other flame, a wire wrapped with cotton or gauze; our emergency bag furnishes the alcohol—and we may then proceed, when the bandage has been applied to the arm, to dry cup the entire chest. If the patient is a child, and bleeding is deemed inadvisable, then wet cupping should be done instead—sentimental objections notwithstanding.

Preliminary to the administration of the oxygen, which will have arrived by this time, the nose should be sprayed with a 1 in 10,000 adrenalin solution containing one per cent. or two per cent. cocaine, in order to clear and widen the breathing passages for the free and uninterrupted inhalation of the oxygen. The cocaine is added because of its general stimulating effect, as well. Local effect is all we can obtain from adrenalin; its use is futile for any fancied general effect, excepting intravenously, when, indeed, it is contraindicated owing to its lack of influence on the pulmonary arterioles while raising general blood pressure; it thus increases the engorgement of the lungs.

If additional stimulation seems really urgent the hypodermic use of caffeine sodium benzoate (from 2 to 6 grains) is most reliable. Digitalis and its glucosides are far too slow in action, no matter how employed, for a crisis of this nature.

Should the symptoms change from bad to worse, the patient must be again placed horizontally and artificial respiration carried on at least half an hour to give the remedies used a chance to be absorbed and act; the oxygen need not be interrupted while this is being done. On the other hand, if improvement rewards our endeavor, we should not become overconfident but rather exercise good judgment as to the continuation of treatment. The drugs ought not be pushed longer than is positively necessary for the immediate emergency, due consideration being given the underlying causative condition. Suitable nourishment now becomes of equal importance with medicine—real *food*, not beef tea, slops, soups, and proprietary make believes. The oxygen tank may be kept on hand for several days for possible emergency use; the neighbors and near friends may require restriction to an arbitrary dead line; the windows will sometimes have to be nailed

or spiked open, of course with the understanding that the patient shall be kept perfectly comfortable at all times by means of proper clothing and hot bottles. Diuretics, of whatever class the underlying state may dictate, will be indicated.

There is one "don't" to bear in mind when attending a case of œdema of the lungs: Do not get excited and overwhelm the patient with morphine, nitroglycerin, adrenalin, brandy, normal saline solution, or other so called "stimulants" the imp of empiricism may be shouting in your frantic ear.

(To be continued.)

Therapeutical Notes.

The Treatment of Ulcers of the Leg.—In a lengthy excerpt from *La Quinzaine thérapeutique*, the *Practitioner* for August cites different methods of treatment of ulcers of the leg. The preliminary observation is that no fear need be entertained of curing an ulcer of the leg when the patient shows no lesion affecting the kidney, the liver, and other viscera; when, however, the ulcer acts as an emunctory it is necessary to act with caution. Such is the case in respect to patients suffering from heart-disease, Bright's disease, and cirrhosis. Galland divides the method of treatment into two categories—palliative and curative. For palliative treatment the limb is well cleansed with soap; poultices of starch and boric acid are applied three times a day, and the ulcers are washed with an abundance of solution of corrosive sublimate. After this an application is made of hydrogen dioxide or zinc oxide or thymol iodide. Compresses of salol gauze may also be applied, the surface of which is covered with boric acid ointment. The following ointment is recommended by Belden:

℞ Olive oil,
Ox gall, ... āā ʒss;
Honey of roses, ... ʒii;
White wax, ... ʒi;
Sugar, ... ʒss.
M. Fiat unguentum.

After cleansing the ulcer night and morning with a saturated solution of boric acid, as hot as can be borne, this ointment is then to be spread over it, covered with gauze, and retained in place by a bandage firmly applied.

The author calls attention to the fact that Reclus's ointment must not be overlooked. The formula is as follows:

℞ Antipyrine, ... gr. xv;
Boric acid, ... gr. x;
Salol, ... gr. iii;
Iodoform, ... gr. iii;
Carbolic acid, ... gr. ss;
Corrosive sublimate, ... gr. ss;
Petrolatum, ... ʒi.
M. fiat unguentum.

After washing the ulcer a layer of ointment is spread over it three times a day. It is then covered with protective, so that the ointment shall not be absorbed by the dressing of gauze, which is kept in place by a muslin bandage.

A Local Anæsthetic for Nose and Throat Operations.—At a meeting of the French Ear, Nose, and Throat Association, reported in the *Revue hebdomadaire de laryngologie, d'otologie et de rhinologie* for July 2, 1910, Chavanne communicated a note on the following mixture, which he had found useful as a local anæsthetic in operations on the nose and throat:

℞ Carbolic acid, ... gr. xxx;
Menthol, ... gr. xxx;
Quinine hydrochloride, ... gr. xxii;
Adrenalin, ... gr. 1/20.
M.

REMEDIES OF RECENT INTRODUCTION.

(Continued from page 375.)

Rheumatism lymph, Wright's, is an emulsion of the bacteria of rheumatism with Hayem's serum. One cubic centimetre contains 10,000,000 bacteria. (There are two forms of Hayem's serum, one a physiological salt solution, and the other a solution of 5 parts of sodium chloride and 10 parts of sodium sulphate in 1,000 parts of water.)

Rheumatism Pencils are put up in Germany under the name *Rheumabellinstift*. They are composed of a mixture of iodine, 0.10 gramme; pulverized capsicum, 4.0 grammes; camphor, 3.0 grammes; menthol, 2.0 grammes; rosin, 20 grammes; yellow beeswax, 20 grammes; petrolatum, 5.0 grammes; oil of turpentine, 5.0 grammes; oil of wintergreen, 1.0 gramme. The molten mass is poured into hollow wooden pencils fitted with a screw at the bottom, which is turned to eject the mass as needed. The wooden holder is sufficiently strong to permit of its use in massaging any part of the body.

Silin is hexamethylenetetramine citrosilicate, and is used in uric acid diathesis. It is supplied as a mineral water containing three grammes silin in each litre.

Sodium Mercuriamidooxybutyrosalicylate is an amorphous hygroscopic powder, very soluble in water. It is given as a remedy for syphilis, in doses of from 1½ to 2 grains hypodermically.

Sophol is an organic silver combination with methylene nucleinic acid, forming a yellowish powder, soluble in water. It has been recommended for use in eye affections, especially for the prophylaxis of ophthalmia neonatorum in four per cent. solution in the same way as protargol.

Stoman is a chemical combination of formaldehyde with the maltose of malt extract (penthamethanalmaltosat). It is employed as a local disinfectant in affections of the mouth and throat, and is marketed in tablets of fifteen grains, containing about one seventh grain of formaldehyde.

Strophanthone is a purified and physiological standardized preparation of strophanthus seed which is intended for either oral or hypodermic administration in the indications which strophanthus and digitalis are used; dose, hypodermically, eight minims; internally, fifteen minims.

Subacetal is the name given to a mixture of lead subacetate and alum which is designed for the extemporaneous preparation of solution of aluminum acetate. It is also put up under the name of Statin in gelatin capsules containing fifteen grains. One capsule is dissolved in one pint of distilled water to form solution of aluminum acetate.

(To be continued.)

NEW YORK MEDICAL JOURNAL
INCORPORATING THE
Philadelphia Medical Journal
and The Medical News.

A Weekly Review of Medicine.

Edited by
FRANK P. FOSTER, M. D.

Address all business communications to
A. R. ELLIOTT PUBLISHING COMPANY,
Publishers.
66 West Broadway, New York.
Cable Address: Medjour, New York.

SUBSCRIPTION PRICE:
Under Domestic Postage Rates, $5; under Foreign Postage Rate, $7; single copies, fifteen cents.

Remittances should be made by New York Exchange or post office or express money order, payable to the A. R. Elliott Publishing Co., or by registered mail, as the publishers are not responsible for money sent by unregistered mail.

Entered at the Post Office at New York and admitted for transportation through the mail as second-class matter.

NEW YORK, SATURDAY, AUGUST 27, 1910.

EHRLICH'S 606.

The interest aroused by the announcement of the discovery of a remedy for syphilis by Professor Ehrlich recalls the excitement which was caused by the publication of the discovery of tuberculin in 1891. When the preliminary reports regarding the discovery of this latter agent were made public we took occasion to caution the medical profession against taking too sanguine a view regarding its efficacy. Unfortunately that caution proved to have been most timely, for the brilliant hopes based on Dr. Koch's announcement were not fulfilled, as the action of tuberculin has proved to be protective and diagnostic rather than curative. Bearing in mind this disappointment, it is well to accept with some caution the prophecies which have been made regarding the complete annihilation of syphilis in the near future.

There is, however, much more substantial ground for the hopes expressed regarding the effect of 606, than was the case with Koch's tuberculin, for the latter scientist was practically forced into publication before the therapeutic efficiency of tuberculin had been determined experimentally. Ehrlich, on the other hand, has been able to test the effect of his remedy thoroughly on animals and in German, Austrian, and Russian clinics. It has been used in something like 2,500 cases of human syphilis with practically uniform good results. We have therefore much more substantial grounds for hope in this case than in the case of Koch's tuberculin.

The reports which reach us from Germany indicate that Dr. Ehrlich has been deluged with applications for supplies of his 606, but that he has uniformly declined to furnish the remedy save to a few physicians personally known to him who are in charge of government hospitals and who are in a position to have complete control of their patients and keep them under competent and constant observation. As a matter of fact no supplies have been furnished to hospitals outside of Germany and Austria, save to one in St. Petersburg. In view of the severe and unjust criticisms to which Dr. Koch was subjected in connection with the use of tuberculin, it would seem that Dr. Ehrlich has adopted a wise policy in restricting the use of the drug to official circles until such time as its uses and its methods of administration have been thoroughly studied and its value and limitations demonstrated beyond any possibility of doubt.

It is not improbable that unauthorized manufacturers will undertake to supply dioxydiamidoarsenobenzol, which is the systematic name of the base, or a valueless substitute, but any such product should be accepted with caution, for, so far as we have observed, Ehrlich has not published his method of procedure in such detail as to enable any one to manufacture the substance with assurance that it is identical in every respect with that made at the experimental institute at Frankfort. When supplies of the genuine product are available it must be borne in mind that the methods prescribed by Ehrlich and his associates must be followed with the most scrupulous care. It will be recalled that the most severe criticism of tuberculin came from those who did not know how to use it. The product prepared by Ehrlich and the methods to be followed in its use were set forth in detail in the *New York Medical Journal* for April 6, page 821; May 28, page 1138; August 13, pages 337 and 338; August 27, pages 435 and 436; and, finally, the whole subject has been treated in a concise but most lucid and effective manner by Dr. Samuel J. Meltzer in the *Journal* for August 20, page 371.

The drug is prepared in the Royal Institute for Experimental Therapeutics at Frankfort on the Main by Dr. Bertheim, one of Ehrlich's assistants. It is a sulphur colored powder having the formula $C_{12}H_{12}O_2N_2As_2$. It is put up in small sealed tubes *in vacuo*. It is *not* a patented remedy, but its preparation is protected by the government to prevent adulteration and poor imitation, and when the clinical studies have been completed and the results proved to be such as to warrant the conclusion that it is a specific, 606 will be within the reach of everyone, as it is now the case with vaccine virus, tuberculin and the antitetanic and antidiphtheritic sera.

It was first used clinically by Professor Konrad Alt, of Uchtspringe, near Magdeburg, Germany. The dihydrochloride is the salt which has so far been used. The dose is 0.3 of a gramme, or about five grains, injected hypodermically once or twice a week according to the severity of the case. The injection was made first in the gluteal region, but now the shoulder is used, or it is injected into a vein. The intramuscular injection has caused considerable pain, lasting for some hours. The intravenous injection is not painful. The intramuscular injection has been used on the storage theory followed out in the injection of mercury, namely, that the system will absorb the remedy as rapidly as it is needed.

Clinical observations so far indicate that it will arrest the progress of syphilitic symptoms within twenty-four hours, the spirochætæ disappearing from the blood within from four to ten hours after the injection of the remedy, and that it prevents a subsequent manifestation in ninety-two per cent. of the cases. As was pointed out in our last issue by Dr. Meltzer, the question of dose is still in an experimental stage, and the cases in which the results were not satisfactory may have failed to react merely because the dose was insufficient or improperly applied. One of the most interesting features of the remedy is that it seems to be a specific poison for all kinds of spirilla, having acted most satisfactorily in the dangerous intermittent fevers prevalent in St. Petersburg. If this specific toxicity to spirilla is general, as it appears to be, we may find that we have in dioxyamidoarsenobenzol not only a remedy for syphilis, but a specific for that dread disease which has depopulated vast areas of Central Africa, the sleeping sickness.

A NEW CHAPTER IN THE CARE OF THE INSANE.

The history of the care of the insane is an inspiring story of the efforts of a small number of men to substitute enlightenment and kindness for ignorance, fear, and cruelty in the treatment of the most unfortunate of all sick persons. It is a story of slow and tedious progress, with many disheartening reverses, but it includes a few epoch making events, in each of which, to the lasting credit of our profession, the central figure has been a physician. The growing enlightenment of mankind has been responsible for the adoption of humane measures in dealing with the insane, but the suggestion of these measures, and in most instances the uphill fight to make bad conditions generally known and to urge the necessity for reform, have been the portion of medical men. The fact upon which all recent movements for improving the lot of the insane have been based is that insane people are sick people and their care is the province of the doctor. Just as the cruel punishments designed to drive out the devils of which they were thought to be possessed gave way to the care of the insane in the madhouses, where they were at least protected from the violence of the public and from fanatics, so the custodial asylums have given way to the State hospitals of the present day.

When Pinel struck off the chains of the women of the Salpêtrière, in 1793, a new epoch, that of nonrestraint, was ushered in, although it was many a long year before his teachings received genera acceptance. In 1864, through the efforts of Dr. Sylvester D. Willard and the memorial presented to the legislature by the Medical Society of the State of New York, the Willard Asylum for the chronic insane was established and the way prepared for complete State care, which, under the guidance of Dr. Carlos F. MacDonald, then president of the State Commission in Lunacy, was brought about in 1890, and 4,200 of the insane poor were delivered from the almshouses, where they had been kept in conditions of almost inconceivable misery and degradation.

Another new epoch in the treatment of mental diseases opened when, almost unnoticed in the rush of business at the close of the last session of the New York legislature, a law was enacted to transfer bodily the care of the insane prior to their commitment from the peace authorities and the overseers of the poor to the health officers of the State. This was recognition, in the most practical way, of the fact that those suffering from mental disease were subjects for medical care in all the stages of their disorder, before the legal authorities had pronounced the words which made them "legally insane" as well as after that important event. How absurd it would seem if cases of the notifiable contagious diseases were placed in the hands of the police for three days or for as many weeks while a judge was preparing the papers necessary for their quarantine or admission to a hospital, and if during that time only the poormaster were responsible for their care! And, yet, that is precisely what has been done in the case of those suspected of mental disease.

The results of this course were shown in the report of a committee appointed by the State Commission in Lunacy to investigate the condition of the insane before admission. This report, which was commented upon some months ago in these columns, revealed conditions which we predicted would prove intolerable when they became generally known, and the speedy enactment of the new law

is due to the influence of this report and to the efforts of the commission to have the care of the insane placed where it belongs. It was found by the committee that it was the rule, not the exception, for the insane and those suspected of being insane to be kept in jails and lock-ups, often in the same cells with criminals. In many cases no separate provision was made for women, and they were left entirely in the charge of men.

It has been illegal in New York State since 1826 to keep any person suspected of being insane in a prison or jail, but the humane intent of the law has been nullified by the words "unless he be violent or dangerous, *and there is no other suitable place for his confinement.*" The violence and dangerousness of the patient were determined by those competent authorities, the policeman and the poormaster, and of course there was "no other suitable place for his confinement" when to provide such places would cost real money. In the new law these words are stricken out and it is required that health officers shall see that "such insane person is cared for in a suitable place and is provided with proper medical care and nursing." The chance that lack of funds will prevent suitable care from being provided is removed by a provision in the new law that, if there is no money available in the county treasury, the county treasurer is authorized to borrow a sufficient sum on the credit of the county and to issue the usual certificates of indebtedness for it. The city of New York and the county of Albany are exempted from the provisions of the new law, for in the psychopathic wards of Bellevue and of the Kings County Hospital and in "Pavilion F" of the Albany Hospital provision is made for the care of the insane pending commitment.

The new law makes it possible to extend humane and skilled care to hundreds who have suffered sorely for the lack of it, but the benefits to be derived will depend very largely upon the manner in which the new responsibility is met by the health officers of the State. The official care of the insane in New York is now in the hands of the medical profession, from the onset of the earlier symptoms to the termination of the disease. This is where it ought to be, but it is a grave responsibility and it is a matter of concern to us all that it should be adequately met. It is necessary for health officers to familiarize themselves with the best means of performing their new duties, and it is unquestionably the duty of the State Commission in Lunacy and of the different State hospital superintendents to help in every way. There is no doubt that there will be the most hearty cooperation between those already charged with the care of the insane and the health officers who are about to take up an important share in it. In the larger cities, where there is an organized force in health departments, one man at least should be especially qualified for this work. The medical profession should also take an active interest in securing facilities for carrying out the intent of the law. Under such circumstances the operation of the new law will prove a notable advance in the care of the insane, and it is safe to predict that similar laws will be passed in other States and the benefits very widely extended.

PHARMACISTS REFUSE TO SELL SOOTHING SYRUPS.

The action taken by the Philadelphia Association of Retail Druggists in condemning the promiscuous sale of soothing syrups containing habit forming drugs is a step which must commend itself alike to physicians and to laymen. At a meeting held on August 5th that association adopted the following resolutions:—

We, the members of the Philadelphia Association of Retail Druggists, realizing the danger to public health by the indiscriminate sale and use of habit forming drugs, when present in proprietary or patent medicines, especially that class of preparations included under "soothing syrups" and "comforters," designed for use for infants; also appreciating the earnest efforts of the director of the Department of Public Health and Charities of Philadelphia to limit the sale and use of these dangerous preparations:

Resolve, That the members of the Philadelphia Association of Retail Druggists discourage the sale, unless ordered by a physician on prescription, of any proprietary or patent preparation containing these habit forming drugs, and also

Resolve, That this association commend Dr. Joseph S. Neff, director of the Department of Public Health and Charities, for his earnest efforts to prevent this indiscriminate sale and use of such dangerous preparations, and that the members of this association give to the department every possible aid and encouragement in this excellent work.

The pharmacists of Philadelphia have ever taken a leading rôle in pharmaceutical affairs. They were the first to establish a school of pharmacy in this country, or indeed in the world. From among them have arisen leaders who have reflected credit both on their calling and on their city. It is not a matter of astonishment, therefore, that in this matter they should have taken the lead and that their action should have found a large following. For we observe that in several other cities of Pennsylvania, in Baltimore, and in the national capital similar action has been taken or is contemplated. Where pharmacists take such an attitude, it is the duty of the physician to voice his appreciation. For the majority of mankind the consciousness of rectitude alone is but poor compensation, and pharmacists who are willing to sacrifice their commercial in-

terests for the public welfare may well expect to receive at least a word of commendation from the physicians with whom they come into personal contact.

A CORRECTION.

In an editorial article in our last issue, entitled Arsenic in the Treatment of Syphilis, we stated that Dr. S. J. Meltzer had carried on at the Rockefeller Institute experiments on animals with Ehrlich's new preparation "No. 606." This was an error. Experiments with this preparation were carried on at the Rockefeller Institute by Dr. Henry J. Nichols, in a study of the effect of the preparation upon experimental yaws, the germ of which is closely related to that of syphilis. His results were similar to those obtained in syphilis.

News Items.

Changes of Address.—Dr. W. C. Mardorf, to 2136 South Grand Avenue, St. Louis, Mo.

Dr. H. Rabinowitsch, to 333 East Seventy-eighth Street, New York.

The Medical Inspection of Schools in Pittsburgh.—Thirty physicians and ten nurses will be appointed by the Department of Health of Pittsburgh, to carry out the work of medical inspection in the schools. The inspections are to be begun as soon as the public schools are opened.

Pellagra in Illinois.—The Surgeon General of the Army has detailed two medical officers to assist the commission appointed by the Governor of Illinois some months ago to investigate an outbreak of pellagra in Peoria. This action was taken at the request of the governor. The officers assigned to the task are Captain Joseph F. Siler and Captain Henry J. Nicholls, of the Medical Corps of the Army.

To Fight Pellagra in Austria.—According to press despatches pellagra is prevalent in Austria, and heroic methods are being taken to stamp out the disease. In order to stop the use of infected corn meal, which is thought to be responsible for the outbreak, the Austrian Government has constructed six modern steam rye bakeries in the Southern Tyrol, which are under the direct supervision of the government of the province. The city governments of this section also rigidly supervise and inspect all private bakeries.

Civil Service Examinations.—Among the positions for which the New York State Civil Service Commission will hold examinations on September 24th, are the following: Clinical pathologist, Cancer Laboratory, Buffalo, $2,500, men only; physician, Lakeview Sanatorium, Troy, N. Y., $1,000; trained nurse, State institutions, $420 to $600; veterinarian, Departments of Health and Agriculture, $5 to $7 a day. Applications should be filed on or before September 17th. For detailed circular and application blank address the State Civil Service Commission, Albany, N. Y.

Imperial Cancer Research Fund.—The annual meeting of the Imperial Cancer Research Fund was held at the Royal College of Surgeons of England, London, on Wednesday, July 20th, the Honorable Arthur J. Balfour, vice-president, in the chair. The eighth annual report of the Executive Committee was presented by Sir William Church. After recording the events of the year, it was stated that the question of laboratory accommodations had engaged the attention of the committee, and it was hoped that the Royal College might be able to provide adequate and suitable laboratories in their new Examination Hall for the use of the fund. Dr. E. F. Bashford, the general superintendent, presented his report, which contained an account of the principal features of statistics tabulated from the data of 13,000 cases of cancer collected from hospitals. The Duke of Bedford was elected president.

The Medical Faculty of Marquette University.—The following physicians have been added to the staff of the medical faculty of Marquette University: Dr. W. H. Washburn and Dr. Robert Curtis Brown, in the department of internal medicine; Dr. R. G. Washburn, department of dermatology; Dr. G. A. Hipke, department of obstetrics, and Dr. A. J. Bach, in the department of ophthalmology. These men were all formerly members of the staff of the College of Physicians and Surgeons, now the medical department of Carroll College, Waukesha.

The Dixmont Asylum for the Insane Overcrowded.—Dr. Frank Woodbury, of Philadelphia, secretary of the State Commission in Lunacy, recently inspected the Dixmont Asylum for the Insane, which is near Pittsburgh. He found 997 patients in the institution, which was planned to furnish accommodations for only 500. Arrangements are being made for the prompt removal of at least 100 patients, but where they will be taken has not yet been decided, as all the other institutions for the insane maintained by the State are also overcrowded.

A Children's Pavilion at the Philadelphia Jewish Sanatorium for Consumptives.—According to plans recently adopted, a pavilion is to be erected at the farm at Eagleville, Pa., of the Philadelphia Jewish Sanatorium for Consumptives, where children under twelve years of age will be treated free. This pavilion will contain sleeping accommodations for fifteen patients, an isolation room, and play rooms, and will be connected with the main building by a covered porch. A trained nurse and a teacher will be in charge and a modern outdoor school will be organized in the near future.

The New Naval Hospital at the training station of the Great Lakes for apprentice seamen will be finished some time in October, it is expected. It is said that this hospital will be one of the best equipped in the Service. No expense has been spared to make it complete in every detail, fireproof, aseptic in finish, and supplied with every necessary appliance for the care of the sick. The main hospital will have accommodations for eighty patients, and the contagious disease hospital will have forty beds in addition. A power plant, a laundry, and quarters for the medical staff and the nurses constitute the rest of the institution.

Colored Eyeglasses.—Passed Assistant Surgeon H. W. Smith, of the United States Navy, is conducting a series of experiments with colored eyeglasses, which it is thought will prove interesting, particularly to naval officers, whose eyes are exposed to intense light while on shipboard and to the bright light of the tropics. Dr. Smith proposes to thoroughly investigate the popular belief that colored eyeglasses absorb the rays of the sun which are irritating to the nervous system, and he proposes to make experiments on the tint and composition of glass for eyeglasses and determine, if possible, which shade absorbs these rays, and which is the most transparent.

The Conflicting Reports Concerning Cholera in Italy.—Press despatches from Bari, in the southern part of Italy, dated August 22d, stated that the spread of cholera in that country had been checked and that no new centres of infection had been developed. A cablegram from Dr. H. D. Geddings, to Surgeon General Wyman, of the United States Public Health and Marine Hospital Service, dated a day earlier, August 21st, stated that infection existed in at least eight points in the province of Apulia. On that day some seventy deaths were reported and sixty new cases. The infection came from Russia. The Italian authorities are cooperating heartily with the officers of the United States Marine Hospital Service in their efforts to prevent the embarkation of emigrants from the infected districts.

The American Public Health Association.—As previously announced, this association will hold its thirty-eighth annual session in Milwaukee from September 5th to 9th, inclusive, under the presidency of Dr. Charles O. Probst, of Columbus, Ohio. The membership of the association extends over the United States, Canada, Mexico, and Cuba. A splendid programme has been prepared on subjects relating to public health, special attention being paid to the question of sanitation. An interesting feature of the meeting will be an exhibition showing administrative and scientific methods and devices as applied to public health work, and the results of such work. The meeting gives promise of being very successful.

The Health of Buffalo.—During the month of July, 1910, the following cases of and deaths from contagious diseases were reported to the Buffalo Department of Health: Tuberculosis, 91 cases, 39 deaths; typhoid fever, 22 cases, 4 deaths; diphtheria, 60 cases, 13 deaths; scarlet fever, 156 cases, 15 deaths; measles, 48 cases, 4 deaths; whooping cough, 223 cases, 12 deaths; mumps, 2 cases, 0 deaths; chickenpox, 20 cases, 0 deaths; cerebrospinal fever, 3 cases, 0 deaths. There were 40 deaths from cholera infantum. The total deaths from all causes numbered 564, corresponding to an annual death rate of 16.28 in a thousand of population. There were 35 stillbirths. The deaths of children under one year of age numbered 139, and between one and five years of age, 58.

Mortality Statistics of San Francisco.—During the month of June, 1910, the total number of deaths reported to the Department of Public Health of the State and County of San Francisco, was 442, in an estimated population of 475,000, corresponding to an annual death rate of 11.16 in a thousand of population. There were 26 stillbirths, 14 males and 12 females. The deaths from important causes were as follows: Tuberculosis, 48; pneumonia, 33; organic heart disease, 73; Bright's disease, 24; diseases of the digestive system, 47; typhoid fever, 10; diphtheria, 6; scarlet fever, 1; whooping cough, 3; diseases of early infancy, 11; old age, 12; deaths from violence, 37. The deaths of children under five years of age numbered 84, of whom 57 were under one year of age.

To Restrict the Sale of Patent Medicines in Sweden.—Consul-General Edward D. Winslow writes from Stockholm that the sale of proprietary medicines is to be prohibited in Sweden if certain proposed legislation is enacted into a law. He says that there has been a strong movement of late years to prevent, by law, the import and sale in Sweden of so called "patent medicines." The salient features of the proposed legislation may be said, first, to clearly define what is to be construed or admitted as medicine and the Swedish apothecaries are to be instructed more closely in regard to their duties; second, to put a stop to all "secret medicines." All medicines placed on sale or on the privileged list must have their contents stated on the label, and the prices at which they are sold must not be higher than the prices for the raw materials, which are fixed by the Government.

Vital Statistics of New York.—During the week ending August 13, 1910, there were 1,399 deaths from all causes reported to the Department of Health of the City of New York, in an estimated population of 4,711,956, corresponding to an annual death rate of 15.49 in a thousand of population, as compared with a death rate of 16.85 for the corresponding week last year. The death rate for each of the five boroughs for the week was as follows: Manhattan, 15.04; the Bronx, 15.23; Brooklyn, 15.36; Queens, 19.21, and Richmond, 21.06. There were 135 stillbirths. The deaths of children under five years of age numbered 588; 422 under one year of age, 92 between one and two years of age, and 68 between two and five years of age. The deaths from diarrhœal diseases under five years of age numbered 287; over five years of age, 309. There were 6 deaths from sunstroke, 10 from suicide, 8 from homicide, and 62 due to accidents. Two thousand five hundred and fifty births and 543 marriages were reported during the week.

The Health of Chicago.—During the week ending August 13, 1910, the following new cases of and deaths from transmissible diseases were reported to the Department of Health of Chicago: Typhoid fever, 76 cases, 6 deaths; measles, 37 cases, 2 deaths; cerebrospinal fever, 1 case, 0 deaths; whooping cough, 44 cases, 7 deaths; scarlet fever, 51 cases, 7 deaths; diphtheria, 79 cases, 8 deaths; chickenpox, 4 cases, 0 deaths; tuberculosis, 109 cases, 61 deaths; pneumonia, 16 cases, 41 deaths. Five cases of contagious diseases of minor importance and three cases of diarrhœal diseases were also reported, making a total of 425 cases reported. The deaths under two years of age from diarrhœal diseases numbered 159. There were 27 death from congenital defects and accidents, and one death from sunstroke. The total deaths of children under five years of age numbered 263, of whom 185 were under one year of age. The total deaths from all causes, exclusive of stillbirths, numbered 595, corresponding to an annual death rate of 13.6 in a thousand of population, as compared with a death rate of 13.9 for the preceding week and for the corresponding week in 1909.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Department of Health for the following statement of new cases and deaths reported for the two weeks ending August 20, 1910:

	August 13th		August 20th	
	Cases.	Deaths.	Cases.	Deaths.
Tuberculosis pulmonalis	498	145	677	170
Diphtheria and croup	216	25	192	17
Measles	144	13	81	5
Scarlet fever	83	5	86	1
Smallpox	1	..	..	..
Varicella	14	..	19	..
Typhoid fever	105	12	129	12
Whooping cough	36	10	16	9
Cerebrospinal meningitis	4	5	..	3
Total	1,101	215	1,200	217

Personal.—Dr. Dudley P. Allen, of Cleveland, for many years visiting surgeon to the Lakeside Hospital and professor of surgery in the Medical Department of the Western Reserve University, has resigned both positions and has gone abroad for an indefinite period. He was accompanied by Mrs. Allen.

Dr. Charles A. L. Reed, of Cincinnati, sailed for Europe on August 18th, to attend, as a special delegate from this country, the International Congress of Gynæcology and Obstetrics, which is to be held in St. Petersburg during the week beginning September 25th.

Dr. Francis M. Slack, director of the bacteriological laboratory of the Boston Department of Health, has tendered his resignation, to take effect early in September. Dr. Slack has accepted a position as instructor in bacteriology in a medical college in Kansas.

Dr. William Osler, regius professor of medicine at the University of Oxford, is visiting friends in Baltimore.

Gustave Moynier, president of the International Committee of the Red Cross since the foundation of the committee in 1863, died in Geneva, Switzerland, on August 22d, aged eighty-four years. He held honorary degrees from the universities of Geneva, Berne, and Heidelberg.

Dr. William H. Rowe, mayor of St. James, Minn., has been appointed by the governor surgeon general of the State Militia, to succeed the late Dr. Alexander J. Stone.

The Health of Philadelphia.—During the week ending July 23, 1910, the following cases of and deaths from transmissible diseases were reported to the Department of Health of Philadelphia: Typhoid fever, 20 cases, 1 death; scarlet fever, 21 cases, 1 death; puerperal fever, 0 cases, 6 deaths; erysipelas, 3 cases, 2 deaths; chickenpox, 3 cases, 0 deaths; diphtheria, 51 cases, 6 deaths; measles, 53 cases, 2 deaths; whooping cough, 57 cases, 13 deaths; pulmonary tuberculosis, 90 cases, 62 deaths; pneumonia, 17 cases, 30 deaths; mumps, 6 cases, 0 deaths; cerebrospinal fever, 2 cases, 0 deaths; tetanus, 1 case, 0 deaths; trichiniasis, 1 case, 0 deaths. There were 10 deaths from tuberculosis other than that of the lungs, 2 deaths from dysentery, 3 deaths from cholera morbus, and 172 deaths from diarrhœal diseases under two years of age. There were 36 stillbirths, 23 males and 13 females. The deaths of children under five years of age numbered 273, 216 under one year of age, 36 between one and two years of age, and 21 between two and five years of age. The deaths from all causes numbered 592 in an estimated population of 1,500,595, corresponding to an annual death rate of 19.21 in a thousand of population.

During the week ending July 16, 1910, the following cases and deaths from transmissible diseases were reported to the Department of Health of Philadelphia: Malarial fever, 1 case, 0 deaths; typhoid fever, 13 cases, 0 deaths; scarlet fever, 22 cases, 1 death, erysipelas, 2 cases, 0 deaths; chickenpox, 4 cases, 0 deaths; diphtheria, 66 cases, 10 deaths; measles, 69 cases, 3 deaths; whooping cough, 60 cases, 13 deaths; pulmonary tuberculosis, 86 cases, 48 deaths; pneumonia, 10 cases, 26 deaths; mumps, 1 case, 0 deaths; trachoma, 1 case, 0 deaths; tetanus, 1 case, 0 deaths. There were 13 deaths from tuberculosis other than that of the lungs, 2 deaths from dysentery, 2 deaths from cholera morbus, and 149 deaths from diarrhœal diseases under two years of age. There were 45 stillbirths, 28 males and 17 females. The deaths of children under five years of age numbered 279, 203 under one year of age, 42 between one and two years of age, and 34 between two and five years of age. The deaths from all causes numbered 584, corresponding to an annual death rate of 18.91 in a thousand of population.

The American Association of Clinical Research will hold its second annual meeting in Boston on September 28th and 29th. A splendid programme has been prepared which contains many valuable contributions to the literature of researches in medicine and surgery, in prophylactic and anaphylactic medicine, in mental medicine, radiotherapeutics, metabolism, etc. One session will be open to the public. All physicians are cordially invited to attend this meeting and to become members of the association. A complete programme, together with application blanks, will be forwarded upon request. The officers of the society are: President, Dr. E. Stillman Bailey, of Chicago; general secretary, Dr. James Krause, of Boston; treasurer, Dr. F. X. Corr, of Boston; registrar, Dr. De Witt G. Wilcox, of Boston; research committee, Dr. B. Merrill Ricketts, of Cincinnati, for three years; Dr. F. B. Percy, of Brookline, Mass., for two years, and Dr. A. L. Soresi, of New York, for one year; educational committee, Dr. George Strohbach, of Cincinnati, for three years; Dr. A. R. Peebles, of Boulder, Colo., for two years, and Dr. F. C. Askenstedt, of Louisville, Ky., for one year. The address of the general secretary is 419 Boylston Street, Boston.

Health Conditions in Hong Kong.—In a recent number of the Daily Consular and Trade Reports, Vice-Consul General Stuart J. Fuller reviews health conditions in Hong Kong, with special reference to hygienic measures undertaken. During the past year the colonial government continued the rigid enforcement of general sanitary regulations and the control of building designs in the interest of sanitation. Special preventive measures were enforced to combat malaria and plague. The general health of the colony was about as usual throughout the year. The total number of deaths from malarial fever during the year 1909 was 420. Antimalarial measures were first introduced in the colony in 1899, and during the past year considerable attention has been paid to this work. A systematic search has been made for the breeding places of the mosquitos and when cases of malaria have come to the knowledge of the sanitary department, steps have been taken to prevent the breeding of mosquitos at or near these places. Basements and coolie quarters have also been fumigated. Hygiene is taught systematically at all the schools of the colony, and special attention is paid to the teaching of the mode of conveyance of infection of malaria by mosquitos and the manner in which the mosquito breeds. There were 545 deaths from beriberi during the year, as compared with 736 in 1908. It is expected that steps will be taken to prevent the importation of polished rice, which, it is thought, is a cause of the disease.

Antirabic Inoculations at the Hygienic Laboratory.—Passed Assistant Surgeon Anderson, director of the Hygienic Laboratory, of the United States Public Health and Marine Hospital Service, Washington, D. C., reports that during the fiscal year ending June 30, 1910, 60 patients were treated at the laboratory with antirabic inoculations. Of these 57 completed the treatment and 3 withdrew before completing treatment. The average age was 26.7 years. No deaths from rabies are known to have occurred among these patients. Of these 60 patients, 47 were actually bitten or scratched by the teeth of the animal, 10 had scratches or wounds exposed to the saliva, and 3 were exposed during laboratory manipulations. The exposure was to dogs in 55 cases, to cats in 3 cases, to a cow and a mule, one case each. In 54 cases the exposure was to actual rabies as shown by laboratory examination in 49 cases, and veterinary diagnosis in 5 cases. In 5 cases (4 dogs and 1 cow) the animal was shown not to have been rabid, and in 1 dog it was merely suspected. The injuries were characterized as severe in 5 cases, moderate in 16, slight in 39. They were located on the face in 9 cases and on the extremities in 51 cases. In addition to the antirabic inoculations administered in the laboratory antirabic treatments have been sent out to State boards of health in the form of dried cords preserved in glycerine. By this means the virus is transported long distances without appreciable loss of potency. From August 16, 1908, when the sending of treatments was begun, to June 30, 1910, 951 treatments have been sent upon request of health officers and others. The virus has been supplied to State boards of health as follows: Alabama, 326; California, 62; Colorado, 1; Delaware, 4; Iowa, 18; North Carolina, 285; North Dakota, 1; Rhode Island, 5; South Carolina, 122, and Wisconsin, 84, making a total of 908.

The Fourth International Congress for the Care of the Insane will be held in Berlin, Germany, from October 3d to 7th. This congress, like the previous ones, will deal with questions relating to the treatment of patients suffering from mental diseases, but will also promote investigations leading to the protection of general mental health, and the prevention, as far as possible, of mental derangements. It is hoped that municipal officers, lawyers, and teachers, as well as physicians, will become interested in the work of the congress. An exhibition will be held in connection with the congress, which will show the progress which has been made during the past thirty years in the care and treatment of persons suffering from nervous or psychical derangements. Explanatory lectures, illustrated with lantern slides, will be held in connection with the exhibit. The official languages are English, French, German, and Italian. The meetings will be presided over by the honorary presidents, to be elected at the inaugural meeting.

The Medical Society of the State of Pennsylvania.—The sixtieth annual meeting of this society will be held in Pittsburgh, on October 4th, 5th, and 6th, under the presidency of Dr. Appel, of Lancaster. The sessions will be held in the new Soldier's Memorial Hall, a week prior to the formal dedication of the building. The local committee of arrangements is preparing an elaborate programme of entertainments for the visiting members and their friends. Dr. Edward B. Heckel is chairman of the committee and Dr. Adolph Krebs is secretary. The officers of the society are: President, Dr. Theodore B. Appel, of Lancaster; first vice-president, Dr. Charles A. E. Codman, of Philadelphia; second vice-president, Dr. Henry H. Riegel, of Catasauqua; third vice-president, Dr. Joseph W. Albright, of Muncy; fourth vice-president, Dr. Charles W. Bachman, of Reading; secretary, Dr. Cyrus Lee Stevens, of Athens; assistant secretary, Dr. Alexander R. Craig, of Philadelphia; treasurer, Dr. George W. Wagoner, of Johnstown. Dr. George W. Guthrie, of Wilkes-Barre, is chairman of the Board of Trustees. The work of the meeting has been divided into three sections, as follows: The Section in Medicine, with Dr. James I. Johnston, of Pittsburgh, as chairman; Surgery, with Dr. Edward Martin, of Philadelphia, chairman, and Specialties, with Dr. G. Hudson-Makuen, of Philadelphia, chairman.

Medical Interne at the Government Hospital for the Insane.—The United States Civil Service Commission announces an examination on October 5, 1910, to secure eligibles from which to make certification to fill a vacancy in the position of medical interne, Government Hospital for the Insane, Washington, D. C., at $600 per annum, with maintenance, and vacancies requiring similar qualifications as they may occur in that hospital, unless it shall be decided in the interest of the service to fill the vacancy by reinstatement, transfer, or promotion. The positions are tenable for one year, and pay $50 a month and maintenance. At the end of six months, however, during which time a postgraduate course in mental and neurological diagnostic methods, etc., is given, an examination is held, and promotions to the next grade, assistant physician, at $75 a month and maintenance, are made. Beyond this there is regular advancement for men whose services are satisfactory. The Government Hospital for the Insane has over 2,900 patients and about 750 employees to care for. In addition to the general medical practice offered, the scientific opportunities are excellent and the clinical opportunities in neurology and psychiatry are unsurpassed. As considerable difficulty has been experienced in filling vacancies in the position of medical interne in the Hospital Service during the past several years owing to the limited number of eligibles available, qualified persons are urged to enter this examination. Applicants must have been graduated from a reputable medical college not more than two years prior to the date of the examination, unless they have been continuously engaged in hospital, laboratory, or research work along the lines of neurology and psychiatry since graduation. Both men and women will be admitted to the examination, although there are no vacancies for women at present. Applicants must be unmarried, and the age limit is twenty years or over. Applicants should apply at once to the United States Civil Service Commission, Washington, D. C., for Form 1312, or for further information regarding the examination.

Pith of Current Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL.

August 11, 1910.

1. The Clinical Aspects of Arteriosclerosis, By Henry Jackson.
2. Medical Inspection of Public Schools, By Justice G. Hanson.
3. The Diagnosis of Infantile Paralysis in the Prodromal and Early Acute State as Found in the Experimental Study of Acute Poliomyelitis in Monkeys, with Report of Findings in Four Human Cases, By William Palmer Lucas.
4. A Prophecy Based upon Studies in Pasteurization, By M. J. Rosenau.
5. Notes on the Condition Denominated External and Internal Atony, Suggesting Its Association with Tuberculosis, By A. Mackenzie Forbes.

1. Arteriosclerosis.—Jackson speaks of the two forms of arteriosclerosis, which give rise to clinical symptoms, the senile type and diffuse arteriosclerosis. Diffuse arteriosclerosis is a disease found especially and in its most marked type in individuals otherwise healthy, often robust type and full blooded, who are from forty to fifty years of age; it may be found in much younger people, but it is most common in those advanced in years. The heart is enlarged, weighing on the average 400 grammes or more; in this form of heart disease we find the largest hearts, cases being on record of hearts weighing over 800 grammes, when there was no valvular disease. The dilatation of the heart may be so great that all of the valves become incompetent, so that murmurs may be heard at all of the orifices of the heart without the presence of any disease of the valve curtains. The kidneys are usually diseased as shown clinically by the presence of albuminuria with casts. The author then speaks of the ætiology and symptoms, and concludes in saying that in prevention, we cannot, unfortunately, escape all infectious diseases, but we can advise our patients to avoid excess in food, especially when no active exercise is taken, and to care for a proper elimination of excrementious matter. When the disease is recognized at an early stage, before the heart is seriously involved, much can be gained for the patient by a careful regulation of the diet. Excess of nitrogenous food, especially meats, should be avoided; further, the weight of the patient should be very carefully reduced by a reduction of the total caloric value of the food taken. The work should be reduced, both physical and mental; a man with an early arteriosclerosis must learn to live on a lower plane. One drug he considers of value as a preventive measure and, perhaps in some cases, as a curative measure, potassium iodide, to be taken for three weeks in a month in a dose of five tenths grain three times a day. When potassium iodid disagrees with the stomach, strontium iodide may be substituted though it seems to him less efficacious. Small doses of nitroglycerin give temporary relief to many of the symptoms and may do permanent good. In most cases saline cathartics are indicated. In recent years there has accumulated considerable evidence that permanent good is accomplished by the use of electricity in the form of the high frequency current.

5. The Relation of Internal and External Atony to Tuberculosis.—Forbes remarks that stoop is a manifestation of a laxity of the ligaments and a weakness in which the dorsal spine becomes kyphotic in shape, and the lumbar spine compensates by assuming the position of lordosis. It is his firm belief that it is impossible to get a dorsal kyphosis without a lumbar lordosis. How to cure stoop or round shoulders has baffled most surgeons, all brace makers, and nearly every mother. The British drill sergeant seems to have solved in a crude way the problem. His constant advice, nay, his every command to the recruit, is to hold his belly in and to raise his eyes but slightly above their normal position. Forbes believes that the way to cure stoop is not to attack the shoulders, is not to attack directly the kyphosis, but rather to attack it indirectly by preventing lumbar lordosis, and thus forcing a reduction of dorsal kyphosis, thereby changing the centre of gravity. It is only a question of balance. Throwing the shoulders back tends to broaden them; holding one's head back does not do away with a dorsal kyphosis, but, as soon as you straighten out the lumbar lordosis you are bound to have a compensatory change in the dorsal column. To do this he makes a slight spinal brace which is somewhat similar to the spinal brace of the late Fayette Taylor. This brace has shoulders and a pelvic band. The shoulder straps are not to hold the shoulders back, but, with the pelvic band, are calculated to form two fixed points of counter pressure at the upper part of the dorsal spine and at the pelvis. This brace can be expected to do little or nothing toward curing stoop. It acts simply as a vehicle to carry the important part of the whole appliance, namely, an abdominal apron or support, which is buckled to it and which can be expected to so control the abdomen of the patient that a lumbar lordosis is straightened out, which straightening is followed by compensatory changes in the dorsal region of the spine.

August 18, 1910.

3. The Therapeutic Use of Ascitic Fluid, By Theobald Smith.
2. On the Importance of Determining the Potency of Digitalis Preparations, By Joseph H. Pratt.
3. The Therapeutic Use of Ascitic Fluid, By Timothy Leary and Robert W. Hastings.
4. Medical Social Service Work, By William B. Woodbury.
5. The Meteorological and Hygienic Aspects of the Floods in France in 1910, By Guy Hinsdale.

2. Digitalis.—Pratt says that recent scientific tests have shown that the drug is best preserved and administered in the form of powder. It is interesting to note that this was known to Withering. He gave the following definite directions for the preparation of the powder which differ in no essential from those of Focke. "The leaf stalk and midrib of the leaves should be rejected, and the remaining part should be dried, either in the sunshine or on a tin pan or pewter dish before a fire. If well dried, they readily rub down to a beautiful green powder, which weighs something less than one fifth of the original weight of the leaves. Care must be taken that the leaves be not scorched in drying, and they should not be dried more than is requisite to allow of their being readily reduced to powder." These directions have been disregarded and forgotten, and in 1905 Pratt could not find that any digitalis was imported into our country in the form

of powder. Pratt calls attention to the fact that the tincture is generally given in too small doses to produce a prompt physiological effect. A tenth of a gramme of digitalis is the usual dose of the powder. This corresponds to 15 minims of the tincture, but a cubic centimetre will be found to contain from thirty-five to forty drops of the tincture when the ordinary medicine dropper is used. Hirschfelder, in his recent work on diseases of the heart, recommends large initial doses of digitalis. If Withering's directions for the administration of digitalis were followed, the use of an inert drug would readily be detected. "Let the medicine," he said, "be continued until it either acts on the kidneys, the stomach, the pulse, or the bowels; let it be stopped upon the first appearance of any one of these effects."

3. **Therapeutic Use of Ascitic Fluid.**—Leary and Hastings have used ascitic fluid for two years in infantile debility, that is ascitic fluid derived from cases of mechanical obstruction of the abdominal venous circulation. They observe that it is a valuable human saline whose use from a therapeutic standpoint will furnish more effective stimulation than could be obtained from an artificial salt solution or from a similar solution produced by diluting sea water. The most important objection to its use lay in the belief that ascitic fluid from such source contained toxic agents derived, in the case of cirrhosis fluid, possibly from the toxic bodies responsible for the disease, or, in the cardiac cases, from the end products of destructive metabolism of tissues. The most complete refutation of the claims that toxic agents were present in such fluids came from Hodenpyl's intravenous use of such fluid in cancer. Leary and Hastings had come to the same results while experimenting on guineapigs and rabbits. They report twenty-two cases treated with ascitic fluid with good results.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

August 20, 1910.

1. Aspects of the Medical Curriculum of To-Day and of To-morrow, By A. W. Meyer.
2. Importance of Bedside Teaching, By Frank W. Hornbrook.
3. Ophthalmia Nodosa or Caterpillar Hair Ophthalmia, with Report of a Case, By Walter R. Parker.
4. Primula Dermatitis, By O. H. Foerster.
5. Primary Sarcoma of the Heart with Report of Additional Case, By Hugh A. Baldwin.
6. A New Incision for Epithelioma of Upper and Lower Lip of Same Side. By Walter S. Sutton.
7. A Clamp for Isolating a Portion of the Lumen of a Bloodvessel without Stopping the Circulation through the Vessel, By G. N. Stewart.
8. Femoral Hernia of Falloppian Tube without Ovary, By Charles H. Parkes.
9. Intradural Tumor of the Spinal Cord with Operation, By Edward D. Mayer and Otto C. Gaub
10. University Medical Schools, By James J. Walsh.
11. The Prevention of Infant Mortality from an Educational Standpoint, By L. T. Royster.
12. Public Health Organizations in Nebraska, By D. T. Quigley.
13. The Permanent Elimination of Yellow Fever, By J. H. White.
14. Experimental Poliomyelitis in Monkeys, By Simon Flexner and Paul A. Lewis.
15. Notes on the Technique of Transfusion of Blood, By J. Shelton Horsley.
16. A New Method of Inflating the Stomach, By Stewart Lewis.

3. **Ophthalmia Nodosa.**—Parker gives an interesting review of thirty-eight cases of ophthalmia nodosa, to which he adds a case which he observed himself. By ophthalmia nodosa is understood an affection of the eye caused by the entrance into the tissues of the eyeball of the hair of certain varieties of caterpillar. Our author says that it was first described by Pagenstecher in 1883 as "caterpillar hair ophthalmia," later by Wagenmann as pseudotuberculosis, and by Sämisch as ophthalmia nodosa. It shows a tendency to form tuberclelike structure, often showing nodules appearing singly or in crops, progressing mostly with exacerbation and remissions The patient does not always give a history of caterpillar contact, the diagnosis being made with the aid of the microscope. In a majority of cases there is a history of injury to the eye by a caterpillar; in the absence of this history there is one of sudden onset of the symptoms, consisting of pain, more or less severe, much photophobia and lacrimation. These symptoms tend to subside after a few days, but do not entirely disappear. In the course of a few weeks an exacerbation of all the symptoms occurs. The time between the date of infection and the first consultation, in the cases reported, varied from four hours to six months. The period of time that elapsed between recurrent attacks varied from four days to three years. The treatment adopted has been in the main symptomatic. The local remedies employed have been those usually prescribed in the treatment of iritis. The resemblance of the corneal lesions to those found in keratitis punctata superficialis of Fuchs has led in some cases to the administration of mercury, but without results. Operative treatment has been limited to iridectomy, to combat iritis or increased tension, and for the excision of nodules and hairs. The prognosis should be guarded. It will depend on the tissues involved, the severity of the case, and the extent of the structural change present.

4. **Primula Dermatitis.**—Foerster observes that the primula or primrose, a flowering plant found in many homes as a floral decoration, is frequently the cause of a dermatitis of more or less severe degree, a fact which is not sufficiently recognized by the medical profession. He describes the dermatitis as observed by him as follows: On the face, were blotchy, irregularly outlined, erythematous patches extending over cheeks and jaws, converging on the chin, but leaving nose and ears unaffected. On the central part of the left cheek was a dollar sized patch of closely crowded, almost coalescent, peculiarly angular and flattened vesicles, with clear contents, resembling drops of dew. In the labiomental furrow and extending upward to midpoint of the lower lip was an intensely erythematous and slightly puffy area with a central group of small, closely set, angular vesicles. There was no glandular enlargement. The eyelids were not affected. The dorsum of the left hand was puffed up with an elastic, cushionlike swelling, extending to the ulnar border, over the dorsal and lateral surfaces of the fingers, and slightly to the palmar surface of the fingers. The dorsum of the right hand showed a pale, elastic swelling, extending over the dorsum of the fingers, without erythema, vesiculation, or bleb formation. The palms of both hands were unaffected, but perspired

excessively. On both forearms, more on the extensor than on the flexor surface, and extending upward to within two inches of the elbow, was a blotchy, unevenly distributed, rose red erythema with irregular margins, with intervening areas of normal skin. The eruption on the two arms was of equal intensity, and erythematous throughout. The remainder of the body was not involved. There were intense itching and burning, especially on the lateral surface of the fingers. The treatment consists in the removal of the primula and thorough cleansing with alcohol of objects which have been in contact with the plant to prevent a recurrence of the dermatitis. Alcohol, ether, and chloroform are solvents of the secretion, and when applied immediately after contact with the plant have been found to prevent the development of the reaction. In other respects treatment is to be conducted according to the usual principles followed in cases of acute dermatitis. The intense itching and burning are usually promptly relieved on the application of calamin lotion or zinc gelatin, and under a bland ointment the inflammation rapidly subsides and the skin returns to normal after slight desquamation. This rapid subsidence of an apparently intense inflammatory process of eczematous character, under indifferent treatment, ought to be sufficient to arouse suspicion of the artificial nature of its production and lead to a thorough inquiry as to its external origin. As a preventive measure it appears desirable for florists to acquaint prospective purchasers of the *Primula obconica* and *Primula sinensis* with the irritating properties of these plants, and thus to assist in not only decreasing the number of cases of dermatitis but in arriving at a correct and early recognition of their cause.

7. **Vessel Clamp.**—Stewart describes a clamp for isolating a portion of the lumen of a blood-vessel without stopping the circulation through the vessel, the essential points of which are the following: The long, narrow grip of the jaws in the longitudinal direction. The extension of the grip at each end at right angles to the length of the vessel. This is necessary to complete the occlusion of the isolated segment. The length of the rectangular portions must be proportioned to the diameter of the vessel worked with. If too long, they project too far beyond the vessel, and thus make the field of operation less accessible for some purposes. The hollow behind the gripping edge in which the open portion of the vessel is safely lodged and protected from pressure. The size of this hollow must be great enough to comfortably accommodate the non-occluded part of the vessel.

13. **Permanent Elimination of Yellow Fever.**—White's program for permanent elimination of yellow fever is thus summed up: Each centre under one man's control, and he given full power to make a steady, insistent, and minutely exact fight on all Stegomyia breeding places. No attempt made to handle the sick, and so rouse the ire of the individuals. Be most careful to make it plain that subordinates shall annoy no one, and then see that they do not annoy. The officer should approach the question of human carriers of the disease, if at all, solely through friendly suggestion to local authority, after getting on intimate terms, and then only to discreet officials, for fear of arousing opposition to his own particular work, which, in the end, would be absolutely sure of success. Could this be done, the medical profession would have to its credit an achievement that would be worth in money to the western world each year all of its cost, and to humanity more than can be estimated.

MEDICAL RECORD.

August 20, 1910.

1. The Influence of the Use of the Automobile upon the Upper Air Passages, By D. Bryson Delavan.
2. First Aid to the Insane and Psychopathic Wards, By Albert Warren Ferris.
3. Is Mercury a Specific in Pulmonary Tuberculosis? By W. N. Beggs.
4. Hyperchlorhydria and Abdominal and Pelvic Surgery, By J. H. Carstens.
5. Is Koch's Bacillus the Cause of Cancer? By Thomas G. McConkey.
6. Observations on the Pathology of Multiple Adenomata of the Rectum, By Jerome M. Lynch.

3. **Is Mercury a Specific in Pulmonary Tuberculosis?**—Beggs says that mercury is in no sense of the word a specific in pulmonary tuberculosis. It does not fulfil a single one of the requisite conditions, it is of value in only certain cases. With the exception of those cases definitely complicated with syphilis, Beggs has not yet been able to determine in what cases or classes of cases it can be expected to be beneficial. His impression is that it is in those cases in which a luetic taint cannot be excluded with reasonable degree of certainty. It may be of value also in those cases more readily responding to suggestive influence. In a majority of cases the improvement is principally subjective, and there is little or but very slow improvement in the physical signs. In no case has he observed any such specially remarkable clearing up of the physical signs as have been reported by Wright. In those cases in which a luetic taint cannot be definitely or with reasonable probability determined, the improvement is due probably to a simple tonic effect of the mercury, or to its beneficial action on the digestive functions, or to the psychic effect on the patient.

5. **Koch's Bacillus and Cancer.**—McConkey speaks of his theory that the tubercle bacillus is the cause of malignant growths, which he first published in the *New York Medical Journal* of December 19, 1908. The fundamental conception in this hypothesis is that the tubercle bacillus, by reason of its well known effect of causing normal tissue cells to take on the habit of proliferation, supplies the missing factor in the ætiology of cancer. In the young or robust this cell proliferation is normally checked by a defensive reaction on the part of the body, and a "tubercle" is formed by the encapsulation of the minute colony of proliferating cells. But if this cell proliferation is set up in one in whom the defensive reaction is delayed or inadequate, the encapsulation does not take place and the proliferation continues with the result of its becoming a malignant growth. It is evident, continues the author, that the larger the colony of proliferating cells becomes the more difficult it will be to encapsulate it and convert it into a quiescent tubercle. If this cell proliferation is set up in one in whom the defensive reaction is delayed or inadequate, encapsulation is lacking and the proliferation continues, and a malignant growth results. The effort to encapsulate these infiltrating cells is still kept up, but is

abortive and only serves to furnish nutrition to these proliferating cells, which are devoid of any altruistic property, but are endowed with the power of reproduction. It happens that lymph is the normal food of cells, and the laudable but futile effort to encapsulate them brings this food to the colony, especially to the outer concentric layers. The amount of this food supply would depend upon the efficiency of the lymphatic system. Herein lies the explanation of the well known fact that the growth of cancer in the young is more rapid than in the old. The animal body has learned to protect itself against the growing colony of cells by encapsulating it and converting it into a harmless tubercle, harmless for the time as contrasted with an infiltrating malignant growth, which it would otherwise become without such encapsulation. That this encapsulation is accomplished by the lymph is proved by the experiment of producing tubercles in the cornea, a tissue devoid of bloodvessels. We know that, in later adult life and in advanced life, the lymphatic glands are usually somewhat atrophied. This corresponds to the age incidence of malignant growths.

BRITISH MEDICAL JOURNAL

August 6, 1910.

1. The Ethics of Insanity, By T. Duncan Greenlees.
2. Rheumatoid Arthritis. By Charles J. Macalister.
3. Cats as Plague Preventers, By Andrew Buchanan.
4. Vicious Circles Associated with Disorders of the Urinary Organs. By Jamieson B. Hurry.
5. Treatment of Smallpox in Red Light and in the Dark: Some Practical Remarks. By C. H. Würtzen.
6. Recovery from Apparent Arterial Sclerosis. By W. M. Crofton.

4. Vicious Circles in Urinary Diseases.—Hurry states that in urinary diseases many circles arise from a failure of those beneficent powers with which the body is provided for the purpose of counteracting disease. Thus in cases of chronic prostatic obstruction the walls of the bladder undergo considerable hypertrophy with the obvious intention of overcoming the obstruction. Such hypertrophy is compensatory and beneficent. But if the demands are excessive, the limit of compensation is reached and the hypertrophy is replaced by degeneration and atrophy. In this case the advantage becomes disadvantage and a vicious circle is established. In cases of cystitis associated with the presence of a calculus the formation of ropy mucus and the deposit of phosphates is probably a conservative process intended to encase the irritating calculus and thus to shield the vesical walls from injury. But the opposite effect often follows, since the deposited colloids and phosphates lead to the growth of the calculus and thus increase, instead of lessening, irritation. Where a heavy hydronephrotic kidney takes up a lower position in the abdomen, the constant ache that resulted from the dragging on the ligaments may be relieved and the movements become less irritating. But if such descent leads at the same time to kinking of the urethra, the benefit vanishes, since the displacement causes the hydronephrotic kidneys to increase in size and to cause more and more disturbance. Lastly, where in cases of obstruction to the passage of urine renal secretion is increased, owing to reflex action, the increased flow is probably intended to wash away the obstacle, much as a foreign body lodged in the cornea calls forth increased lacrimation. But if the increased flow of urine fails to remove the obstacle, its effect is but to increase the accumulation of urine and thus intensify the mischief.

5. Treatment of Smallpox.—Würtzen speaks of Finsen's method of treating smallpox. He draws attention to certain conditions which must always be present if the treatment is not to disappoint expectations. In the first place, the arrangements ought not to be limited to the sick room, but account should be taken also of the adjoining rooms, passages, etc., so that no great quantity of injurious daylight should be thrown on the patient in opening the door of the sick room. All sources of artificial light must be covered with red lamp glasses, such as photographers use, and when doctors and nurses in their rounds think it necessary to use ordinary light, it ought only to come from a stearine candle, of which the flame contains so few chemical rays that no harm is done if used only for a short time. It therefore follows as a matter of course that even for a short time, and in order to see the exanthem better, daylight ought not to be admitted freely. Of the question as to how the red light affects the patients—apart from their illness—and the staff generally, he says that nothing is known of its remote effects, but the reaction to it seems to be somewhat different. Some do not seem to be appreciably influenced, while others find it rather unpleasant in the long run, and some get an absolute aversion to it. It often produces a feeling of heaviness and headache, and it is always found exhausting and tiring for reading; on the other hand, he has not noticed any mental excitement or increased sensuality, as is said to have been the case elsewhere. Naturally the red light produces a strong sensitiveness in the retina to ordinary daylight. This excessive sensitiveness is very troublesome to the nurses, who of course are obliged to go backward and forward between the red room and the daylight. To mitigate these drawbacks—and in a red room the light on bright days is very intense—colored spectacles may be used with advantage. Green and blue glass each in their own way considerably modify the light and produce different shades, of which some will prefer one, others another; and with smoked glasses a chiaroscuro is obtained, which gives great relief. Contrary to what might be expected, neither the blue, the green, nor the smoked glass, provided they are not very dark, cause any considerable weakening of the light in a red room.

LANCET.

August 6, 1910.

1. The Status Lymphaticus in Its Relations to the Use of Anæsthetics in Surgery, By Dudley W. Buxton
2. Removal of the Appendix in the "Quiet" Period, By William Henry Battle.
3. The Preventive and Administrative Measures for the Control of Tuberculosis in New York City, By Herman M. Biggs.
4. The Incidence of Tuberculosis in Children, with Special Reference to School Attendance, By J. Edward Squire.
5. Bilharziosis and how to Prevent It, By James F. Allen
6. Heart Puncture, By J. Wallace Milne.
7. The Serum Diagnosis of Hydatid Disease: Fixation of the Complement, By Kenneth Eckenstein

1. **Status Lymphaticus.**—Buxton remarks that the status lymphaticus is usually found in infants or young persons. The latter are tall and weedy individuals. The skin is fair, clear, and pale, but not necessarily pallid; later in the disease the complexion may become pasty, but this is not a constant sign. The temperament is a curious blend; the patients are slow but highly intelligent, shy and self conscious, and unduly affected by physical and moral stimulation. Thus they are intolerant of cold, and although highly emotional yet maintain an external calm, while their pulse, which is normally very slow, 50 to 60, will be found to be rendered quick and irregular by some trifling occurrence which may have annoyed them. Escherich describes the presence of much subcutaneous fat and hyperplasia of all the lymphoid tissues. The thyreoid gland is enlarged in about fifty per cent. of the cases, and, as has been pointed out by Professor John Berg, the condition frequently coexists with the symptoms of Graves's disease, and probably accounts for some, if not all, of the sudden deaths which occur during operations upon patients suffering from exophthalmic goitre. The tonsils are chronically enlarged, and the nasopharyngeal vault is commonly filled with adenoid vegetations. The lymphatic glands, especially the cervical, show enlargement, although owing to the quantity of subcutaneous fat it is difficult in many cases to palpate them. The mesenteric glands and the spleen are described as commonly hypertrophied and are palpable in many subjects. Dr. W. McCardie lays great stress upon the constant presence of hypertrophied lingual follicles as well as lymphoid nodules in the sinus pyriformis, anteriod surface of the epiglottis, and pharyngeal wall. Hochsinger states that the thymus, which appears to be not only unduly persistent but greatly hypertrophied in these cases, may sometimes be seen as a pulsating tumor rising above the episternal notch. Even when not seen it may be percussed and gives a shadow when a radiogram is taken.

2. **Removal of the Appendix in the "Quiet" Period.**—Battle says that his method of operation of appendicular inflammation possesses the following advantages. It is applicable to all cases of operation in the quiet period; when the appendix is not adherent, it can be removed through an opening in the peritonæum the size of a finger. When the case is a difficult one the incision can be quickly extended upward and downward as far as necessary. The abdomen having been opened to the inner side of the appendix region, at a point where there are no adhesions to the abdominal wall, the area involved can be isolated by gauze packing and the appendix separated in full view of the operator. There is thus less chance of the tearing of important adhesions, and less likelihood of making holes in the adherent intestine, a most fatal thing if they escape notice; moreover, bleeding points can be readily secured. From this incision the pelvic organs can be examined with the finger, and disease affecting the right ovary or tube dealt with. For the skin sutures fishgut is used, and for ligatures and sutures in other parts nothing but silk. This material is quite safe; catgut has not proved to be so. It is possible that the improved methods of preparation of catgut may make it more satisfactory now, but the same remark applies to the preparation of silk. If there is any doubt, it is possible to sterilize silk again by boiling in a few minutes. As far as possible the aseptic method is employed in all cases.

3. **Control of Tuberculosis in New York.**—Biggs describes the method of attacking the tuberculosis problem in New York: Notification and registration of all cases of tuberculosis are compulsory. Sputum is examined, free of charge, by the members of the staff of the Board of Health. An educational propaganda is carried out. Premises which have been vacated by death or removal of tuberculous patients are either disinfected or renovated by, or under, the supervision of the Board of Health. Clinics and dispensaries are maintained in the city for tuberculous patients, providing examination, home visits, sea shore and mountain hospitals, etc. The death rate from all tuberculous diseases in the old city of New York, including only the borough of Manhattan and the Bronx (where the rate has always been highest), was in 1886 4.42 per 1,000 of the population, and for the five years preceding 1887 it averaged 4.47. In 1909 the rate was 2.45, and for the five year period ending in 1909 it was 2.61. The death rate for pulmonary tuberculosis alone for 1909 was 2.15. In the greater city of New York the rate for 1909 for all tuberculous diseases was 2.17, and for pulmonary tuberculosis it was 1.89.

BERLINER KLINISCHE WOCHENSCHRIFT

July 25, 1910.

1. The Hand as an Instrument of the Obstetrician, By W. Liepmann.
2. The Use of the Ehrlich-Hata Syphilis Remedy in Neutral Suspension, By Leonor Michaelis.
3. Hereditary Syphilis and the Wassermann Reaction, By Paul Mulzer and Walter Michaelis.
4. Experimental Testicular Syphilis in Rabbits by Inoculation of Congenitally Syphilitic Material, By Max Koch.
5. The Demonstration of Tubercle Bacilli in Lupus Miliaris Disseminatus Faciei and Acnitis, By G. Arndt.
6. Blood Transfusion in Men Taking into Account Biological Investigations, By Werner Schultz.
7. Studies of Hæmolysis, By Georg Fischer.
8. A Case of Extradural Spinal Suppuration, By E. H. Oppenheim.
9. Obesity in Youth, By Heinrich Stern.
10. Turgosphygnography or Sphygmography? By Fritz Fleischer.
11. Protective Measures in X Ray Laboratories, By Felix Davidsohn.
12. The Modern Surgery of Pulmonary Tuberculosis, By J. W. Samson.

2. **The Ehrlich-Hata Remedy for Syphilis.**—Michaelis reports a case in which a single injection of this remedy into a child, five weeks old, with hereditary syphilis, produced a remarkable improvement of the symptoms within a week. He speaks very favorably of this preparation which he has used in thirty-six cases with no bad after effects.

3. **Hereditary Syphilis and Wassermann's Reaction.**—Mulzer and Michaelis arrive at the following conclusions: 1, Infants with manifest syphilis react in the same proportion as syphilitics in the secondary stage, ninety-six per cent. positive. 2, The positive reaction appears first with the onset

of manifest syphilitic symptoms. 3, In children over one year old the same proportion holds as in infants. 4. Children with latent syphilis behave as regards the positive seroreaction the same as adults with latent syphilis. 5. The change of the Wassermann reaction by specific treatment appears to be more difficult to attain in children than in adults. 6, The great majority, eighty-three per cent., of the mothers of syphilitic children react positively. 7. When syphilitic parents have several children the later children, or the last without symptoms, give a negative reaction as a rule.

4. **Experimental Syphilis in Rabbits.**—Koch states in a preliminary article that he has succeeded in successfully inoculating the testicle of a rabbit with material derived from a case of congenital syphilis.

7. **Studies of Hæmolysis.**—Fischer deals with the action of the serum upon ether hæmolysis and with the hæmolytic acting erythrocytes. He comes to the following conclusions: Ether acts upon chemically similar substances in the serum and in the blood corpuscles of the same kind of animal; in the one case depriving of poison, in the other dissolving, in both weakened itself in its hæmolytic capacity. Intact erythrocytes of cattle freed from serum dissolve intact erythrocytes of rabbits freed from serum and go themselves into hæmolysis. The corpuscles of the blood of cattle contain hæmolysin, to which he gives the name endohæmolysin. Through the mutual solution of the erythrocytes of cattle and of rabbits arises immun hæmolysin, which is able to dissolve new erythrocytes of both cattle and rabbits. The addition of homologous serum inhibits the solution.

9. **Obesity in Youth.**—Stern thinks that the treatment of obesity in youth by dietetic limitation is not only useless in the great majority of cases, but frequently injurious to the organism. He would direct treatment rather to the prevention of complications than to the obesity itself. In very bad cases, chiefly when symptoms of myxœdema are present, thyreoid preparations may be used. Physical treatment is also useful sometimes.

12. **The Modern Surgery of Pulmonary Tuberculosis.**—Samson says that the artificial pneumothorax gives good results in advanced cases in which the process affects the lungs of only one side and no other organs are tuberculous. The extensive extrapleural thoracoplastic may be regarded as a pendant to artificial pneumothorax to be used when the latter is not applicable on account of extensive pleural adhesions, or other special reasons. Freund's operation is applicable in a certain number of cases; its final result cannot be told at present as it has been performed on too small a number of cases.

MEDIZINISCHE KLINIK.

July 24, 1910.

1. Surgery of the Stomach and Intestines, By Ludwig Moszkowicz.
2. Idiosyncrasy to Cow's Milk in Infants, By Fritz Zybell.
3. A New Treatment for Phlebitis, By Heinrich Fischer.
4. Elasto Massage, a New Method of Massage, By Adolf Schnee.
5. Injudicious and Judicious Measures in the Treatment of Consumptives with Pulmonary Hæmorrhages (Concluded), By Blümel.
6. A Staphylococcus Sepsis Successfully Treated with Antistreptococcus Serum (Hoechst), By August Kistner.
7. A Peculiar Nodular Eruption (Lichen Nitidus Pincus). By Reines.
8. Intestinal Hæmorrhage with Epityphlitis, By C. A. Ewald.
9. Influence of the Sea Climate on the Blood Formation, By Häberlin.
10. The So Called Slow, or Vermiform, Muscular Contraction in the Reaction of Degeneration, Its Analysis and a Simple Method of Graphic Presentation for Purposes of Exhibition, By Alfred Martin.
11. The Demonstration of Pentose in the Urine, By Adolf Jolles.

2. **Idiosyncrasy to Cow's Milk in Infants.**—Zybell reports three cases of this nature. In two the administration of half a teaspoonful of cow's milk induced an erythema associated with fever, vomiting, diarrhœa, and anorexia. Asses' milk and goats' milk produced no such symptoms, but every attempt to give cow's milk induced a repetition. In the third case the result was fatal.

3. **A New Treatment for Phlebitis.**—Fischer describes as a new treatment a system of bandaging acknowledged to be quite difficult in its technique, but which must be applied with absolute correctness in order to obtain the desired result.

7. **Lichen Nitidus.**—Reines describes, with an illustration, a case of this disease which was first described by Pincus in 1907. The microscopical examination confirmed the distinction, which is principally from the lichen ruber planus.

9. **Influence of the Sea Climate on the Blood Formation.**—Häberlin found in almost all the cases observed a greater or less increase of hæmoglobin.

WIENER KLINISCHE WOCHENSCHRIFT.

August 4, 1910.

1. Disturbances of the Bladder after the Use of Preparation 606, By Ehrlich.
2. Opsonin of the Normal Active Serum, By Egon Ewald Pribram.
3. The Stage of Weariness of Stenosis of the Pylorus and Its Treatment, By S. Jonas.
4. The Value of the Specific Complement Fixation Method in Echinococcosis of Man, By G. Braunstein.
5. Contribution to the Effect of Mineral Water upon the Human Metabolism, By Markl.
6. Unpleasant After Effects from the Use of Dioxydiamidoarsenobenzol, 606, of Ehrlich-Hata, By Karl Bohac and Paul Sobotka.

1. **Disturbances of the Bladder after the Use of 606.**—Ehrlich states that the bladder symptoms reported by Bohac and Sobotka must have been due to faults in the preparation or the use of the remedy 606, and quotes the reports of the use of this remedy in several hundreds of cases in the hands of several well known men without the production of such symptoms.

2. **Opsonin of the Normal Active Serum.**—Pribram says that through the dialysis of fresh normal serum by physiological salt solution for from one and a half to five hours both the opsonic and the bactericide properties of the serum are almost completely lost. Therefore a separation of opsonin and alexin cannot be produced by dialysis.

He believes the opsonin of the normal serum and alexin (complement) to be the same.

3. **Stenosis of the Pylorus.**—Jonas considers internal treatment, consisting of washing out the stomach, administration of oil, and careful feeding, to be indicated in every case in which gastroenterostomy is contraindicated for any reason, and that this may bring the stenosis into the stage of compensation.

4. **Complement Fixation in Echinococcus.**—Braunstein finds the complement fixation method an extremely valuable diagnostic aid in cases of active echinococcus.

6. **Bad After Effects of 606.**—Bohac and Sobotka complete the histories of three cases in which bad after effects were produced by the use of 606, and add four cases in which the improvement obtained by this preparation was very temporary.

AMERICAN JOURNAL OF OBSTETRICS.

August, 1910.

1. Cancer of the Uterus, By I. Levin.
2. What May We Now Tell the Community Regarding Cancer? By E. C. Savidge.
3. The Postoperative Treatment of Abdominal Section for Pelvic Disease with Especial Reference to Early Rising and the Use of Eserine, By B. H. Wells.
4. Report of the Committee of the American Gynæcological Society on the Present Status of Obstetrical Education in Europe and America, and on Recommendations for the Improvement of Obstetrical Teaching in America.
5. Three Cases of Cardiac Lesion Complicating Pregnancy and Labor, By E. Lathoron.
6. Intussusception, By H. J. Morgenthaler.
7. Etappen Treatment of Bow Legs and Knock Knees, By C. R. Keppler.
8. Clubfoot and Manipulative Treatment of the Congenital Type, By R. G. Moore.
9. The Complications and Sequelæ of Diphtheria in Children, By J. S. Wall.
10. The Tolerance of Quinine by Young Children with Malarial Diseases, By S. S. Adams.
11. Fissure in Ano in Children, By M. L. Bodkin.
12. Cholesteatoma with a Report of a Case in which the Disease Itself Had Done almost a Complete Radical Mastoid Operation, By J. A. MacIsaac.

1. **Cancer of the Uterus.**—Levin after referring to the various theories as to the origin of cancer observes that they all fail to tell us the primary causes which change the cell itself, or the restraining influences of the rest of the organism. A step forward was made when it was found possible to transplant carcinoma and sarcoma of white mice and rats into other animals of the same species. Important also are the investigations resulting in the specific cure of cancer by treatment with ascitic fluid obtained from cancer patients or by specially prepared tumor emulsions. It is concluded, however, that the ætiology of human cancer can be elucidated only by its study in man. As to cancer of the uterus the well known frequency of involvement of the cervix as compared with the corpus is noted, and also the greater frequency of the disease in parous women. As to the ætiological relationship between myoma and cancer of the uterus analysis of a large number of cases would seem to indicate that it is only accidental. It is thought that the percentage of cases in which laceration of the cervix is of ætiological importance is small, notwithstanding much clinical observation or opinion to the contrary. Primitive women rarely suffer with uterine cancer. It is in the conditions of civilized life for women with their tendency to diminish the resisting power of tissues and organs that the cause for cancer must be sought. Prophylaxis in this disease means observance of hygienic measures during puberty, menstruation, and sexual life generally. Early diagnosis and early treatment must ever be resorted to, especially in view of the obscurity of the early symptoms of the disease, the insidiousness of its onset, and the difficulty in many cases of making a microscopical diagnosis from bits of excised tissue of the products of curettage.

2. **What May We now Tell the Community Regarding Cancer?**—Savidge, under the heading of practical reductions, states that if cancer cannot be caught or inherited, but must be grown, and if its growth depends upon precancer conditions, plus a specific irritation, there is help for the community. There may be corrections of internal secretion, timing, and dose when one knows the rhythm of the readjustments in cell poise. Glandular function must be studied, and the harmonious relation between the various systems of glands preserved. Specific irritations must be controlled or eliminated. Surgery should not wait until cachexia appears. Every cancer patient, at the start, furnishes a partial cure for his own cancer. Synthetic medicine teaches that an incurable thing may sometimes be cured by curing all the other curable things in sight.

MILITARY SURGEON.

August, 1910.

1. The Army Medical Service, By Victor C. Vaughan.
2. Venereal Diseases in the United States Army—Their Prevention and Treatment, By L. Mervin Maus.
3. The Work of the Board for the Study of Tropical Diseases in the Philippines, By W. P. Chamberlain, Horace D. Bloombergh, and Edwin D. Kilbourne.
4. Blastomycetic Dermatitis, By Thomas W. Jackson.
5. Pupil Conditions Occurring in Aliens, Their Significance and Some Suggestions, By Eugene H. Mullan.
6. The Farmer Recruit and the Medical Officer of the National Guard—What They Mean to Our Commonwealth, By James Cabell Minor.
7. The Wassermann Reaction in the Military Service Based on One Thousand Reactions, By Mathew A. Reasoner and Ralph C. Matson.
8. A Case of Hysterical Amnesia, By Surgeon Heber Butts.
9. Creeping Eruption, By Henry I. Raymond.
10. Creeping Eruption. Report of Two Cases, By George H. R. Gosman.

3. **Report of Tropical Disease Board.**—The board consisted of Chamberlain, Bloombergh, and Kilbourne. It takes up the questions of the orangered underclothing (see Miscellany, p. 394); of the effects of the sun rays on blonds and brunets: of diphtheria, epidemic conjunctivitis, Vincent's angina, uncinariasis among white men, typhoid fever, beriberi, etc. All of the papers on beriberi read before the Far Eastern Association of Tropical Medicine at its recent meeting in Manila attributed the occurrence of the disease to the use of over milled

or polished rice (i. e., rice deprived of its pericarp and perhaps its aleuron layer). Fraser and Stanton prevented beriberi in man and also polyneuritis in fowls, by feeding "cured rice" (i. e., parboiled rice which in milling does not lose all its pericarp). Two readers considered that a deficiency of phosphorus, due to removing the pericarp, caused the disease. The infectious theory received no support at this meeting. It is intended to shortly undertake experiments with fowls, feeding some on the under milled rice which the board had recommended for use in the Scout organizations.

7. **Wassermann Reaction.**—Reasoner and Matson have examined in all 950 individuals, which makes over 1,000 reactions, since repeated reactions were made in a number of cases. Of these they found thirty-eight positive who gave a history and twelve who did not admit infection. Eight from whom histories were obtained gave negative reactions. Of the thirty-eight positives who admitted a history, nineteen dated back from two to ten years and it is believed that some of the twelve not giving histories should also be included if the truth were known. This makes about five per cent. of the enlisted personnel who gave evidence of syphilitic lesions and with that a large number were recruits.

ANNALS OF SURGERY.

August, 1910.

1. Benign Bone Cysts, Ostitis Fibrosa, Giant Cell Sarcoma, and Bone Aneurysm of the Long Pipe Bones, By Joseph C. Bloodgood.
2. Neoplasms and Other Tumors Involving the Maxillary Bones, By Stewart L. McCurdy.
3. Fracture of the Head and Neck of the Radius, By Roland Hammond.
4. Backward Dislocation of the Upper End of the Ulna, By James P. Warbasse.
5. Autoplastic Transplantation of Bone, By Henry H. Janeway.
6. Spontaneous Forward Dislocation of the Wrist Joint, By A. C. Stokes.
7. The Cystoscopic Examination in Renal Tuberculosis By Benjamin S. Barringer.
8. Cystic Disease of the Breast, By William J. Taylor.

2. **Neoplasms and Other Tumors Involving the Maxillary Bones.** — McCurdy says that the most common forms of neoplasm are papilloma, polypus, hypertrophy, and epulis. Several forms of papilloma develop from the gums and occur as elongated papillæ in the form of little tufts. Their centre is composed of mesoblastic tissue and they have a covering of the thickened epithelium. They are of the epithelial type. They have an irregular surface with a strawberry appearance. These tufts develop from the gingival margin about one or many of the teeth. The cause is some mechanical irritant as tartar, etc. There is a great tendency to return and even in three or four days they have been seen to grow an eighth of an inch at points where it was thought they had been thoroughly removed by curettement. Thorough removal, cauterization, and disinfection are essential if return is to be prevented. There is no tendency toward malignancy. Polypi of the gums are seen quite frequently and resemble such growths in other parts of the body. They differ from papillomata in that they are usually single, grow to considerable size, and have a distinct pedicle, while the papillomatous variety is multiple, grows exuberantly and rapidly. These tumors vary from the size of a pea to a horse chestnut and are found on the gums in the neighborhood of diseased teeth. They are said to be caused chiefly by the ragged edge of a carious tooth, but it is probable that ptomaines from the operations of bacteria stimulate papillomatous growth upon granulating mucous surface and have more to do with their ætiology than is usually supposed. The growths in question are essentially papillomatous, and exhibit on section large, branching papillæ, covered with a thicker layer than normal of squamous epithelium. The polypi are purely local in their origin and are nonmalignant. The treatment consists in removal under local or general anæsthetic. There is no tendency to return. If there is return the growth will be from a new point of the gum, and not at the point of original growth. Hypertrophy. The enlargement is uniform, developing on both sides of the process and extending around the teeth. The margin of the growth is not defined as in the former varieties, but disappears in the normal mucous membrane. The surface is covered with normal mucous membrane. There is almost a bony hardness resembling osteoma odontoma and malignant growths during their early history. There is little if any pain and no other local or constitutional symptoms. They resemble or may be identical histologically with fibroid epulis as heretofore understood. Treatment consists in removal by excision. They are not malignant and there is usually no return. From the present day viewpoint epulis appears to include any variety of growth of the alveolar process which takes the form of a distinct tumor. During the early stages, unless a section is examined microscopically to prove its histological structure, it would be difficult to say whether it is a hyperplasia, fibroma, or a sarcoma. The age of the patient has little to do with the development, although the majority have been observed in young manhood. He then mentions exostoses, osteomata, and cysts. a. Exostoses or osteophytes are small, round, bony growths arising in the periosteum and spreading laterally as a result of inflammatory or traumatic disturbance of this membrane and its attachment to the bone. They are products of the periosteum, just as it reproduces bone after necrosis. They are composed of branching trabeculæ or sheaves filled in with cellular connective tissue or spongy formation. They have no clinical significance, do not cause death, and should be removed only when making pressure on other structures or their size demands an operation. Endosteomata are the same except that the growth is from the endosteum in the centre of bone. b. Osteoma or hyperostosis is a diffused new formation of bone or a growth including the bone in general and not circumscribed as in exostosis. The entire bone structure is involved. The growth, while occasionally circumscribed, is usually diffused, including a hyperplastic change of the cancellous and compact structure uniformly. It is found everywhere in the skeleton. A form is seen in the alveolar process, where it is usually diffused and the entire process

is involved, but occasionally it is localized. An assignable cause (*i. e.*, a specified irritant) is not always obtainable. c. Cyst of bone is a tumor beginning as a small enlargement of the alveolus usually upon the external surface. As a rule there is no pain or other inflammatory symptom. The growth is gradual, extending over a period of many months or years. The tumor is uniform, margins well defined. The mucous membrane over the surface is normal as a rule and only becomes red when infection and pus formation occur. The tumor may develop years after teeth have been removed and run the same course as other bone cysts. Operation requires free incision, removal of denuded bone, and curettement of such portion of the cyst wall as appears incapable of repair. The cavity should be cleansed with pure alcohol and only moderately packed to control hæmorrhage, subsequent packing should be to prevent the entrance of food only. The walls should be permitted to collapse so that the cavity may be obliterated as early as possible. The orifice should be kept open with packing until the deeper portion of the cavity has healed. Repair without complication or return may be usually expected.

4. Backward Dislocation of the Upper End of the Ulna.—Warbasse remarks that backward dislocation of the upper end of the ulna, when complete, seems to be a rare lesion. He reports such a case, in which the patient, a boy aged thirteen, fell from a wagon, striking upon his hand, forearm, and elbow. He suffered much pain, but received only home remedies. When he was seen by the author, nine weeks after the accident, the right ulna was entirely absent from the trochlear surface. The radius was in its normal place. The upper end of the ulna could be felt lying posterior to the radius. External to the end of the ulna, and connected with the outer condyle of the humerus, could be felt an irregular bony mass which was interpreted as the callus of a fracture of the condyle which had united in malposition. The forearm was in a position of flexion at an obtuse angle of about 150 degrees. Flexion and extension were possible through an arc of about ten degrees. Supination and pronation were possible through only about one fourth of their normal excursion. All of these movements were painful as they approached their limits. There was no œdematous swelling. The arm had undergone considerable atrophy. A long incision was made directly posterior to the displaced ulnar head. The ulna was found rotated just ninety degrees, so that the sigmoid notch instead of looking forward looked inward. The notch and the trochlear surface were covered with new connective tissue and adherent capsule. The connective tissue was dissected away from the articular surfaces; but when everything was freely cleared, it was impossible to rotate the ulna into place. Attention was then directed to the bony mass connected with the outer condyle. It was found that there had been no fracture as was surmised, but that the mass was an exostosis of new bone which had been thrown out beneath the stripped up periosteum in front of the condyle. When this exostosis was chiseled off, the ulna rotated back into normal position with perfect ease. The wound was closed, and the arm was put up at a right angle in plaster of Paris. At the present time the arm is normal in both its anatomy and physiology excepting that extension and flexion cannot be carried quite to their full extent.

INTERSTATE MEDICAL JOURNAL.

August, 1910.

1. A Modern Conception of the Psychoneuroses, By Ernest Jones.
2. Secondary Gastric Manifestations in Chronic Appendicular Inflammation, By Jesse S. Myer.
3. Treatment of Typhoid Fever, By Reynold Webb Wilcox.
4. The Operability of Gastric Cancer with a Palpable Tumor, By Albert E. Taussig.
5. Functional Disorders of the Bladder in the Female Simulating Cystitis, By Arthur Stein.
6. Ephraim McDowell: The Father of Abdominal Surgery, By George Gellhorn.

2. Chronic Appendicular Inflammation. — Myer emphasizes the following points in arriving at a diagnosis of chronic appendicular inflammation with gastric phenomena: 1. A careful history should be taken with special reference to the previous existence of acute abdominal attacks, perhaps as far back as childhood. 2. Primary gastric diseases should be excluded through a determination of the motility of the stomach, careful, and if necessary, repeated examination of the stomach contents, bearing in mind that there may be coexisting lesions in the stomach and appendix and that in a small percentage of cases the acidity may be greatly increased simulating ulcer, may be diminished arousing fears of carcinoma, but as a rule is found within normal limits. In a distinctive diagnosis careful examinations of the fæces for blood, and of the urine, and examinations of the blood itself, will often throw light upon obscure cases. 3. Especial care must be taken in cases of habitus enteroptoticus not to misinterpret the physical signs often elicited in these cases in both the epigastric and right iliac regions. 4. Through the careful physical examination other organs, especially the abdominal, must be excluded as a causative factor, not forgetting again that two lesions such as gallstones and appendicular inflammation are not uncommon in the same individual. 5. Lastly, there must be a most careful examination of the right iliac region for positive findings, bearing in mind that in exceptional cases of chronic appendicitis no local signs can be elicited. In the examination of the appendicular region one or more of the following signs may be present: Local pain on pressure over McBurney's point. Pain radiating toward the epigastrium on pressure over the cæcum without, perhaps, any pain at the point of pressure. Epigastric distress and nausea on pressure in the appendix region. Meltzer's sign, which consists in pain produced through the elevation of the right leg of the patient while exerting pressure over McBurney's point. Pressure on the left iliac region or other portions of the lower abdomen may cause pain to radiate to the right iliac region. Spasticity of the cæcum. Borborygmus in the cæcal region on manipulation. Exceptionally, in very slender individuals, the palpation of the thickened appendix.

Pain and infiltration on right side occasionally elicited through rectal examination.

4. **Gastric Cancer.**—Taussig reports two cases of gastric cancer. He concludes that in cases in which the diagnosis of gastric cancer has been made and in which cachexia has not set in, we may hope for a radical extirpation when the growth is situated at the pylorus, and when there is a palpable tumor, especially, if the latter is very small and freely movable.

PRACTITIONER.

August, 1910.

1. On Congenital Hæmatocolpos, Hæmatometra and Hæmatosalpinx, with Notes of a Case Requiring Laparotomy, By Arthur H. N. Lewers.
2. The Present Position of Cæsarean Section in Obstetrics, By Thomas G. Stevens.
3. The Relief of Pain in Tuberculous Disease of the Larynx, By Walter G. Howarth.
4. Postoperative Shock: Its Prevention and Treatment, By Herbert H. Brown.
5. Mucous Polypus of the Nose and Its Treatment, By Dan McKenzie.
6. Œsophageal Diverticula; with an Illustrative Case, By William Robinson.
7. The Treatment and Prevention of Cubitus Varus and Valgus, By Alexander MacLennan.
8. The Value of an Examination of the Cerebrospinal Fluid in General Practice, By J. Rupert Collins.
9. The Increasing Difficulty of the Diphtheria Carrier, By A. D. Edwards.
10. Remarks on the Ætiology and Pathology of Infantile Paralysis, By Francis Hernaman-Johnson.
11. The Element of Time in Midwifery Practice, By J. D. Slight.
12. The Ars Medendi of Shakespeare, By T. Houghton Mitchell.

1. **Congenital Hæmatocolpos.** — Lewers observes that in most cases of retained menses the fluid is contained in the distended vagina alone, and the uterus is not dilated. The condition, in other words, is one which may be conveniently termed simple hæmatocolpos, when the case does not need to give rise to anxiety. It is merely necessary to divide the obstructing septum, and allow the retained fluid to escape. There is in such cases no risk in hastening the escape of the fluid by pressure on the abdomen, or by using a vaginal douche. There is no special liability to sepsis in cases of retained menses more than in any other operation case. The supposed inherent liability to sepsis in certain cases of retained menses is to be explained by the presence of hæmatosalpinx in addition to hæmatometra and hæmatocolpos. Here the dilated tubes become infected when the vaginal septum has been divided. If hæmatometra exist as well as hæmatocolpos, a condition which is easily recognizable after opening the vaginal septum by finding that the finger passes the internal os into the uterine cavity, the probability that the Falloppian tubes are dilated is so great that the safest course is to perform an exploratory laparotomy. The tubes, if found dilated, can then be removed. If it is likely to be impossible to keep the vagina patent, the uterus should be removed also.

4. **Shock.**—Brown remarks that when shock is profound and the exhaustion of the vasomotor cells is extreme all measures seem to fail, and it should be the surgeon's object to avoid this extreme exhaustion. In less serious conditions even when the shock appears very profound, treatment, if judiciously applied, will often save the life of the patient. It is the shock which manifests itself after the operation is completed which especially calls for treatment. The measures to be adopted are: 1. Absolute rest, with a small dose of morphine. Strychnine has been greatly used of recent years, but the author warns for large or repeated doses, as the action of this drug increases the excitability of the cell. For the same reason he objects to alcohol if given too freely. The best means are warmth; saline injection, injected into the veins; adrenalin in small quantities; digitalis and ergot; and extract from the infundibular portion of the pituitary body.

7. **Cubitus Varus and Valgus.**—MacLennan thinks that the defect in cubitus varus and valgus is due partly to the fact that the epiphysis becomes wrenched from the diaphysis. Among the many cases of injury to the elbow observed by him, no case of cubitus valgus or varus has subsequently developed if it was absent immediately after the accident. The mobility of the joint has not been ultimately interfered with, so it may be presumed that callus was neither deposited in the coronoid nor olecranon fossa. The indications for treatment are somewhat limited, and they are to reduce the deformity and to retain the arm in the position of hyperpronation, to prevent the varus deviation, and in full supination to obviate the valgus one. It is to be borne in mind, says the author, that during the examination the arm must be fully extended at the elbow, otherwise such lateral deformities as varus or valgus will be missed. The question of splinting fractures about the elbow and the time when passive and active movements with massage should be started does not enter into the subject, as in cases of cubitus varus and cubitus valgus fixation in a forced position after reduction will be necessary for a considerable number of days. In minor degrees of valgus deformity the deviation may be neglected and the injury treated as a sprain.

10. **Infantile Paralysis.** — Hernaman-Johnson says that it appears to be generally conceded that infantile paralysis is the result of the malign activity of some toxine; but as to its place of origin, or site of generation, there are two distinct and opposing views. These are that the nerve poison is elaborated in the intestinal tract, and that the disease is of the nature of an acute microbic infection, having its primary focus in the spinal cord, but sometimes not sparing the brain itself. There are still one or two observers who cling to the old idea that the disease is, at least in some cases, the result of mechanical injury; and all are agreed that exposure to extremes of heat and cold, or prolonged exertion, may act as predisposing causes. Many believe that the nerve destruction is due to an intestinal toxæmia; but the bulk of present day opinion seems to lean toward regarding the disease as an acute infective fever, akin to such disorders as cerebrospinal meningitis and lobar pneumonia. The evidence for this latter view rests chiefly upon the mode of onset; the argument from epidemic spreading must be discounted to some extent, as the genuine nature of such epidemics has been disputed.

Proceedings of Societies.

MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Meeting held in Brooklyn, February 14, 1910.

Dr. J. Scott Wood in the Chair.

Abdominal Injuries and Their Treatment.—Dr. Charles H. Goodrich, in this paper, said that, notwithstanding the rapid advances in general surgery and the large number of workers who had now familiarized themselves with abdominal surgery, there existed an astonishing diversity of opinion regarding the manner in which abdominal injuries should be managed. His personal convictions, the result of experience and observation, were expressed in the following conclusions: 1. Apply active measures to overcome or lessen shock, unless signs of active hæmorrhage make quick action imperative. A reasonable time (half an hour to three hours) may be allowed in cases of profound shock, to promote reaction. 2. Cleanse the skin as thoroughly and as widely as in any other abdominal case. 3. Precede an exploration by an intravenous saline infusion or a transfusion of blood, when symptoms of hæmorrhage are marked. 4. Make the search for intraabdominal injuries thorough and systematic. 5. Cleanse the peritonæum thoroughly of septic material and blood or fluid of any kind. This is best done by large gauze sponges followed by copious irrigation, leaving the abdomen partly filled with saline solution. 6. Secure absolute hæmostasis and watertight repairs of all wounds and ruptures. 7. Introduce drains whenever viscera have been penetrated or ruptured. 8. Use intravenous normal saline infusions after the operation in cases of marked shock or acute anæmia. 9. Adopt the Fowler position and the ice coil in all cases as reaction is obtained. 10. If intestinal paresis supervenes, lavage every four hours will accomplish more than enemata.

He described the two commonest types of serious injuries usually met with in civil life, contusions and penetrating wounds. Contusions of the abdomen, he said, had been called "unimportant" unless there was created thereby serious damage to one or more of the abdominal viscera; but two exceptions must be borne in mind, namely: 1. Cases where muscular attachments had been torn away or muscles ruptured, and yet no visceral damage had occurred. 2. Cases of immediate death from shock, without injury to the viscera, due to impact against the upper abdomen, with bruising of the solar plexus and the transmission of fatal impulses through the medium of the pneumogastric and phrenic nerves. In order to determine whether the integrity of any viscus had been impaired we needed not only a fund of observation studies, but thorough knowledge of the mechanical elements which might be involved in the production of abdominal contusions. Having cited the various causes of such injuries, he mentioned that spontaneous ruptures of hollow viscera had also been known to take place from increase of abdominal tension during sudden excessive exertion. To a certain extent the amount of damage resulting from contusion depended upon the thickness, the tone, and the state of contraction or relaxation of the muscles of the abdominal wall at the time of the injury. Contusions of the abdomen commonly caused the following symptoms: Shock and pain, varying in intensity; the pulse usually somewhat increased, sometimes very rapid, rarely very slow; vomiting almost always present; shallow respiration common, but not invariable. The facies resembled the abdominal facies even when there was no absolute rupture. It might be difficult to distinguish between shock due to visceral rupture and that due to hæmorrhage, and abdominal section should be promptly done in every instance. Persistent pain was a cause for suspicion, and wavelike pains tending to spread to the right might indicate gastric or duodenal rupture. Increasing rapidity of the pulse was indicative of visceral rupture or internal hæmorrhage. Vomiting, if repeated, and especially frequent vomiting of bile, was indicative of gastric or intestinal rupture; while vomiting of blood usually meant rupture of the stomach. Hyperæsthesia of the abdominal surface was common in cases of grave internal injury. It was often impossible in the first few hours to make an absolute diagnosis as to the presence or absence of visceral rupture without the aid of an exploratory incision.

Having referred to the mortality under the expectant and the operative methods of early treatment, the speaker said he had never regretted making an immediate exploratory incision. In three instances fatal peritonitis had ensued, after two or three days of useless waiting, in cases of doubt in which he had personally urged this procedure. He strongly deprecated the use of a preoperative dose of morphine in urgent abdominal troubles, and related a case in which the patient, on account of the relief from pain which this afforded, refused an operation until it was too late to be of benefit and died from peritonitis on the third day after laparotomy was finally done.

Traumatic appendicitis occurred occasionally as the result of abdominal contusion. For a long time this had been questioned by eminent surgeons, but enough cases were now on record to establish this type of appendicitis as a clinical entity. Personally, he had observed two instances in which undoubted blame could be traced to injury. As Warbasse had remarked, however, cases could not be cited as examples of traumatism producing appendicitis, for in none of them could we say positively that the trauma was the ætiological factor.

Contusions of the kidney were common. Hæmaturia was present in about ninety per cent. of the cases. It varied in degree, and might be transitory or continue for weeks and months. The bladder sometimes became filled with clots, and typical renal colic might be caused by clots in the ureter. The development of a tumor depended largely on the amount of blood or urine extravasated. Immediate shock was almost invariable. The result in cases treated conservatively might be resolution with slightly disappearing albuminuria, aneurysm of a renal artery or a branch; periorchitic abscess; multiple small abscesses in the renal substance; and suppuration of the broken down kidney due to latent or active gonorrhœal infection. The primary

and immediate dangers were hæmorrhage and anuria due to shock to the governing secreting centres, and the immediate radical treatment usually depended upon the presence of symptoms of severe hæmorrhage. In cases with less urgent symptoms nephrotomy under aseptic conditions was safer than conservative waiting, whenever we were at all doubtful as to the extent of the injury. It was always to be borne in mind that in cases of extensive laceration the careful securing of the renal vessels was the only reliable cure for the hæmorrhage.

Contusions of the bladder, pancreas, spleen, and liver were next considered. In speaking of the last named, Dr. Goodrich said that abdominal section was indicated in all determined and suspected cases. The lacerations might be sutured (usually with difficulty) or packed with gauze. Large clefts were best packed with gauze, in addition to which, deep absorbable sutures should be introduced, so as to hold the walls of the wound firmly against the packing. In liver ruptures prompt section had reduced the mortality from eighty to forty per cent. Rare results of abdominal contusion were rupture of the diaphragm, with or without hernial protrusion, herniated spleen, retroperitoneal hæmatoma, and rupture of the inferior vena cava or abdominal aorta.

In penetrating wounds of the abdomen, whether or not one of the viscera was injured, depended on the type, shape, and size of the instrument; the velocity with which it struck; the extent of surface presented by the viscus; and the mobility of the viscus. The mortality from gunshot wounds was more than double that from stab wounds, and among the reasons for this were the frequency with which more than one of the viscera or more than one coil of intestine was perforated and the infection of the peritonæum by septic material carried within by round or conical leaden bullets causing excessive laceration. The modern bullets of armies were practically aseptic, and this accounted for the lowered mortality of abdominal gunshot wounds in recent wars. The position of the person firing the shot, the attitude of the victim, and the relation of the wound of exit (if such there was) might prove to be valuable data. What was demanded was, first, immediate exploration of the wound by incision (not probing), to determine whether it penetrated the peritoneal cavity; then, if such was the case, thorough examination of the viscera and appropriate treatment for the lesions discovered. Having given details of such treatment, the speaker presented a patient, a young woman of eighteen, who was admitted to the Seney Hospital, Brooklyn, in June, 1909, suffering from a wound made by a .32 calibre bullet which passed through both walls of the stomach. The result of an operation was entirely satisfactory, and she left the hospital after nineteen days, in excellent condition. In stab wounds in approximately half the cases the viscera were not injured; yet in these cases we often could not judge whether this was or was not the case from the symptoms and physical signs. Impaling wounds frequently caused most extensive visceral injury and rapidly fatal hæmorrhage, and whenever there were evidences of visceral injury the most searching examination, through a large incision, was indicated. The peritoneal cavity might be penetrated by foreign bodies within any of the hollow viscera, such as undigested food, fish bones, toothpicks, bristles, splinters of wood, needles, pins, etc., and when symptoms of peritoneal irritation were associated with a history of recent ingestion of a foreign body, the radiographer would often be of service in determining the diagnosis.

Dr. Charles H. Peck agreed with Dr. Goodrich as to the extreme importance of an exploratory incision, and this, he thought, was now recognized by most surgeons. He had certainly never seen any harm result from the procedure. He mentioned an exceptional case, that of a chauffeur who was run over, the wheels of the car passing across his abdomen. There was very marked rigidity, and he urged an exploratory laparotomy. This was refused, however, and the rigidity later disappeared. There was here evidently no visceral injury, and twenty-four hours afterward the man was able to leave the hospital in good condition. The good effect of early operation was shown in the case of a stableman who was kicked in the abdomen by a horse. Laparotomy was performed six hours after the reception of the injury, when rupture of the jejunum was discovered and treated, and the patient made a good recovery. In the case of a boy with a contusion of the abdomen the possibility of a lesion of the intestine was at first masked by other symptoms present, but later rupture of the jejunum was found. Moderate ruptures of the liver giving rise to bile leakage were apt to be overlooked, and he cited the case of a boy who had a small crack in the liver. As a result of this, a month afterward there developed general peritonitis, with marked effusion. The more extensive liver and spleen ruptures, with free hæmorrhage, were not so likely to escape notice.

Dr. Walter C. Wood, having referred to a case corroborating the position taken by Dr. Goodrich, said there were only two points which he desired to emphasize, and these were the significance of an increasing rapidity of the pulse and that of waves of pain passing over the abdomen. As to appendicitis due to traumatism, he entertained some doubts. It seemed to him very difficult to prove that a primary case could be due to trauma. There was one point in the matter of treatment in regard to which there now seemed to be some difference of opinion, and that was the advisability of washing out the abdomen and thoroughly cleansing the peritonæum. Deaver, in his striking paper published in December, had adduced statistics going to show that from peritonitis arising from sepsis the mortality was far less than that caused by surgical manipulations. According to this new idea, the seat of the local injury should be cleansed, but not the general peritonæum.

Dr. Thomas B. Spence said that, while most surgeons were now agreed as to the advisability of immediate exploration, there were still some who hesitated to do a laparotomy in doubtful cases. He thought it should be impressed upon the mind of every one practising medicine that in all such cases immediate section was called for. He had seen very few abdomens opened where there was not something found. In one case, that of a boy with a very rigid abdomen, a rupture of one of the recti muscles was discovered. The washing out of the abdominal cavity was an important question, and personally he

was inclined to agree with the new idea referred to by Dr. Wood. If the operator was careful in his procedure, the speaker believed he could get along without cleansing the peritonæum. The washing out with saline solution, therefore, might in most cases be dispensed with. As to saline infusion, this was perfectly proper, and it had to be resorted to in many cases.

Dr. Goodrich expressed the opinion that the question of cleansing the general peritonæum could be settled by selecting the cases.

The Eloquence of Infancy.—Dr. Le Grand Kerr, who read this paper, said that its purpose was to attract practical attention to the fact that babies talked, though few understood their language. The clinical manifestations of disease in infancy and in maturity were vastly different, and it was this difference which made the appreciation of disease in the infant difficult. The familiar points which were used as the foundation for building up the structure of diagnosis in the adult were in infants entirely absent or were so totally different that they were misleading. In infancy the making of a correct diagnosis entailed an acquaintance with facts about the infant which had no direct bearing upon the disease present, but which must often modify or entirely change our usual interpretation of symptoms. Even in the presence of a definite symptomatology, the reasoning and deductions as to its cause must be entirely distinct from the same processes as they applied in adult life. For instance, the very young infant was comparatively free from convulsive seizures, because during the first three months of life the acute systemic bacterial toxæmias, which were potent factors in the ætiology of convulsions, were infrequent. Then, again, stimulation of the cortical motor centres and of the convulsive centres at the base of the brain did not excite convulsive movements easily, because the dissemination of the nerve force discharged from these centres was hindered by the underdevelopment of the myelin sheaths of the fibres of the pyramidal tracts. But after the third month and until the end of the second year all the nerve centres were most irritable, so that convulsions in the very young infant were of serious import, while those occurring at the onset of some disease in an infant between the ages of three months and two years were of but little significance. The necessity of recognizing such differences as these must be apparent, because it was by a correct analysis of them that we were enabled to determine the real meaning of symptoms. Not infrequently, apparently mild symptoms were interpreted as indicative of mild disease, while seemingly graver ones aroused unnecessary alarm and fostered the drawing of wrong conclusions. In an acute illness in the infant it was found that there was not the same limitation of symptoms referrable to the particular organ or region primarily involved as in adult life, the infant becoming the subject of more general or constitutional symptoms. The reflexes were not restrained, but become generalized, leading to the appreciation of constitutional symptoms; and hence we observed that nervous phenomena which would be of grave import in later life lost much of their seriousness because they occurred in the immature. Again, in infancy the digestive system bore much of the brunt of the invasion of any disease, so that it was the common experience to observe the symptoms of vomiting, diarrhœa, and constipation at the onset of most acute diseases.

The inarticulate expression of disease in the infant had several qualities which adults did not possess, and first among these was the absolute honesty of such expressions. To it, the mere act of living in contentment was sufficient, and this sufficiency was limited to the comfort of the moment, with no memory of the past and no thought of the future. Any illness interfered with this comfort, and the rebellion of the infant to the restraint which the sickness entailed was absolutely honest. This should lead one to appreciate the fact that if an infant showed any tendency to lose interest, to lag in its play, to become fretful, or to act as if in discomfort, the cause should be sought in the bodily health. The disinclination to continue its usual muscular activity should be interpreted as an early sign of ill health, and this was often expressed by it in the desire to be left undisturbed. The infant, being entirely free from introspection, was incapable of exaggerating its ills for the sake of attracting attention to itself. The infant, crying in its apprehension, might be labelled by the inexperienced as a disturber of the peace, but it was not so to the mother, who understood the meaning of the cry and was moved by its eloquence. To the infant her arms were as a narcotic, and when the mental need was fully supplied there was no further demand. Therefore the mental attitude of the infant might be taken as a safe guide and index to its bodily state.

From such general facts as these it could readily be seen that the more definite expression of disease in infancy was liable to be misinterpreted or unrecognized. There were, of course, innumerable objective symptoms which would afford valuable information about the condition present, but many of these were not under the control of the infant, and therefore did not come within the province of the paper. On the other hand, there were many things which were directly subject to the volition of the infant, and a résumé of these the speaker thought might prove suggestive. First, the posture assumed was suggestive. If the infant rested easily and turned to greet the physician, one might be assured that the ailment was slight or that convalescence was established, while the refusal to be attracted indicated that the illness was of a severer type. The lateral position was characteristically assumed in acute pleurisy and pneumonia, and in both instances the infant lay upon the affected side. In pneumonia it was not difficult to get it to change this posture temporarily, but in pleurisy there was a decided objection to this. In the latter disease, if the infant gradually but persistently changed to the dorsal position, it indicated that effusion was taking place. The dorsal position, with slightly bent legs, was the posture of election in acute peritonitis and tuberculous peritonitis, and this position with a curve of the trunk slightly toward the right, and with the right knee more or less flexed or in some instances held up by the infant, was often assumed in appendicitis. On the abdomen was the position taken in some cases of Pott's disease, in phlegmons of the back, and when severe photophobia was present. The upright or sitting position was likely to be assumed when there were abdominal accumulations

or large pleuritic effusions and also in some cases of laryngeal diphtheria. Under forced positions, mention was made of opisthotonos and emprosthotonos, which occurred in some cases of tetany, strychnine poisoning, and meningitis.

Also the face of the average infant expressed more clearly than that of the adult the feelings of the individual. The normal expression during sleep was one of perfect, unbroken calm and peace; the eyelids closed, the lips very slightly parted, and the nostrils immobile. It was only as what was normal was appreciated that the value of facial expression as indicating diseased conditions could be understood; then, with the capability of comparison which came by many observations, one could interpret the expression of the infant. Having referred to the expression of the face in a variety of conditions, Dr. Kerr went on to say that crying was not expressive of the emotions until near the end of the third month of life, and about this time tears were observed to accompany the cry. A feeble cry, or absence of any crying at birth was at once indicative of the general feebleness of the infant, pulmonary atelectasis (accompanied by lividity and infrequent or absent respirations) or congenital heart lesions (with general pallor and a weak, fluttering heart). A loud cry, occurring several times during the day or night, arising suddenly and stopping just as suddenly, especially after the expulsion of gas from the stomach or bowel, was strongly indicative of colic from indigestion; but if, with the same kind of cry, there was a rise of temperature to 101° F. or over, it was proof that there was some associated condition. The significance of a large number of other kinds of cry was then pointed out.

In conclusion, the speaker said that even though the eloquence of the infant moved the mind to a clearer appreciation of the disease present or impending, and observation seemed to indicate a certain pathological process, the attitude of the physician should be twofold. First, for the infant's welfare, the deductions drawn from observation should be confirmed by the most careful examination. Second, having drawn a conclusion, he should, for his own good, question himself as to why he had arrived at such conclusion. As physicians living in an age when scientific activity and achievement were so marked, and when the whole medical world was alive with the stimulating expectancy of impending discovery, we were prone to be negligent of the smaller things. It was the commonplace, every day experience, however, which really fitted one for the highest attainment.

Dr. Ransford E. Van Gieson said that Dr. Kerr had brought out one very important point. While physicians of excellent ability in general could form a correct judgment in regard to the ordinary ailments of persons who had reached an intelligent age, they might all go astray in dealing with the cases of young children. In order to be able to diagnosticate and properly treat these, it was positively essential to make a careful study of the healthy infant. Only by this method could we ever intelligently compare healthy babies with sick ones.

Tuberculosis of the Hip Joint.—This paper, by Dr. Irving D. Steinhardt, was published in the *New York Medical Journal* for April 9, 1910.

Dr. Jacques C. Rushmore expressed some doubt as to the utility of a skin reaction in the diagnosis of hip joint disease. Bone tuberculosis, he said, was almost always associated with tuberculous disease in some other portion of the body.

Dr. Charles H. Jaeger said he did not recognize an early acute stage in this disease, and therefore he thought it a mistake to keep patients in bed, and thus deprive them of the benefit of fresh air and outdoor life. His own practice was to employ some kind of ambulatory apparatus. The limp in hip joint disease was often intermittent, and hence this sign might lead to mistakes. The limp, which was generally very marked in the morning, might disappear altogether in the middle of the day, only to come back again toward evening. This was important, as were also the exacerbations of pain, since the physician might be deceived as to the true nature of the case. The short spica was very useful, and it had the advantage of leaving the knee absolutely free, locking up the hip joint only. With other apparatus, such as the long brace, the ligaments of the knee became relaxed and contraction of the tendo Achillis took place, while general atrophy of the limb also resulted. The principle of the short spica was contrary to all accepted theories regarding the treatment of hip joint disease, in which the great idea was to relieve the pressure on the acetabulum. With this appliance there was absolute fixation of the joint, and the results were better than from other forms of apparatus. Thus, the time of treatment was shortened, lasting only from a year and a half to three years, instead of from three to eight years. Furthermore, when the spica was left off, the calf of the affected limb was actually larger than the other, instead of being atrophied, as was the case from the use of the long splint.

Dr. James P. Fiske said that the efficacy of the treatment depended, first, on efficient mechanical support and, second, on suitable hygienic management. It mattered very little what special form of apparatus was employed, so long as it was one which fulfilled the desired indications. Some surgeons preferred a short appliance, while others were satisfied with the long extension brace. At the present time the results were better than ever before, because the opportunities for appropriate hygienic treatment had been of late so greatly increased; so that large numbers of patients among the children of the poor could now have the benefit of fresh air and wholesome living in such institutions as "Sea Breeze." The special skill of the surgeon was shown in his mechanical treatment of the cases.

Dr. Robert E. Couglin said that the greatest danger from the spread of tuberculosis lay in the late cases. Yet up to the present there was scarcely any public provision for such patients, and it was high time that the municipal and State authorities should adequately care for them. This, he believed, was the only way to get the best of the great white plague.

Dr. J. Herman Branth referred to one diagnostic point which he said was of great value in the first stage of the disease. At this period the diagnosis was not easily made, and the affection was liable to be mistaken for almost anything. Now, if

a child with suspected hip disease was placed on a table, flat on its back, with the legs drawn up, and the sound leg was then fully extended, the lumbar spines would be only very slightly if at all lifted from the table. If hip joint disease was present, when the effort was made to bring the suspected limb parallel with the sound one, it would be found that, owing to the rigidity of the psoas and iliacus muscles, the lumbar spines would be lifted from one to three inches from the table.

Dr. STEINHARDT did not think any harm was likely to result from keeping the patient in bed for a few days.

Book Notices.

[*We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.*]

Die Vergiftungen. Von Dr. R. von JAKSCH, o.ö. Professor der speziellen medizinischen Pathologie und Therapie, klinischen Vorstand an der deutschen Universität in Prag, k.k. Obersanitätsrat, k.k. Hofrat. Zweite, vollständig umgearbeitete und vermehrte Auflage. Mit 42 Abbildungen. Wien und Leipzig: Alfred Hölder, 1910. Pp. xli-732.

If there is a fault to be found with this book it is that the author has taken too much pains to include in it every possible substance that can produce symptoms of poisoning, or cause death when taken in an overdose. On this account alone, however, the work is interesting, informing, and valuable for reference. After passing through extensively minute accounts of the symptoms of acute alcoholic intoxication, in which the ætiology, pathology, prognosis, diagnosis, therapeutics, and post mortem appearances are all minutely described, we come to a lengthy description of delirium tremens and its manifestations. But it does not end here, for a few pages further on is a dissertation on chronic alcoholism which extends over five pages, all with little or no mention of the chemical means of detecting and determining poisoning from alcohol. In truth, the author is more of a clinical pathologist than a chemical toxicologist. The evidences of this multiply the more the volume is studied. It is a treatise on the clinical symptoms of poisoning, their diagnosis, prognosis, and treatment, rather than a work on forensic medicine and chemical toxicology. As such it is a unique compilation of observed facts regarding the untoward effects of the vast number of drugs named in its pages. There are accounts of the poisonous effects of nearly all the modern synthetic hypnotics and antipyretics, fortified in all instances by copious footnote references to current medical literature, chiefly German. Sulphonal, trional, tetronal, and veronal receive mention, and glycerin is not overlooked, for an account of its toxic properties under certain conditions it precedes mention of poisoning cases resulting from the ingestion of overdoses of nitroglycerin, thiodiglychochloride, æthylediamine, choline, etc.

The aniline compounds are treated of in a separate chapter, where the whole range is considered with that thoroughgoing, painstaking care which distinguishes the German investigator. Among the aniline compounds used in medicine that receive careful study are acetanilide and its compounds, including benzanilide, salicylanilide, parabromacetanilide (antisepsin, asepsin), exalgin, maretin, antinervin, phenacetine, citrophen, methacetin, phenocoll, lactophenine, malakine, phenolphthalein, phenylhydrazin, euphorin, thermine, and agathin, to mention the principal substances belonging to the group. This is instanced to indicate the comprehensive character of the work. In its present form it runs to 732 pages. To what dimensions the book would have swelled if a skilled analytical chemist had joined the author as a collaborator there is no saying. The mind shrinks at the thought of it. Apparently nothing has been overlooked except those matters of practical chemical technology which would be likely to aid a chemical expert in proving his case in court. And this brings us back to the thought that *Die Vergiftungen* is intended more than anything else as a manual of clinical pathology and therapeutics in the study of toxicology generally. In this respect it is a very notable work, worthy of taking place as a reference book of the very first order in the teaching of pharmacology and therapeutics, for scarcely a drug that is used in the healing art is overlooked in its pages. The subject of chronic poisoning from the too free or prolonged use of comparatively harmless medicinal agents receives full attention, even to references to the poisonous action of such substances as vanillin and salol, both phenol bodies. The poisonous effects of camphor, terpin, ethereal oils, balsams, and resins find place, likewise those of the compounds of these bodies—truly an all embracing study.

The antidotal treatment recommended does not differ in any particular from what has been prescribed by clinical authorities for several years past. To the reviewer, the touchstone of the value of antidotal treatment as found in works on toxicology is in the measures advised for counteracting the poisonous action of carbolic acid. The response in this case, as in the splendid little work of the author's countryman, O. von Boltenstern, is sound and convincing. The immediate thing to be done is to wash out the stomach with lukewarm water in which is dissolved either sodium sulphate, magnesium sulphate, or white of egg. The washing should be kept up until the odor of phenol is no longer detected in the washings. Mention is made of the recommendation of Phelps, of New York (whose name by the way, is mispelled "Phleps" in two places), to employ diluted alcohol for flushing the stomach. No mention is made of the use of syrup of lime as an antidote. This was first recommended by Husemann, and has been used effectively in several cases that have come under the reviewer's own observation.

The chapter on plant poisons contains a good deal of new matter that is at once interesting and informing. Periodical medical literature has been studied with evident assiduity, for cases and cross references are numerous. With regard to rhus (ivy) poisoning, the treatment recommended is bathing the parts affected with lead water—Goulard's lotion (strong solution of lead subacetate, one drachm, mixed with ten ounces of distilled water containing one drachm of alcohol).

Limitations of space forbid a complete enumeration of the poisonous alkaloids and glucosides, the descriptions of which occupy nearly 200 pages, or

of the animal poisons, including those of scorpions, insects, fishes, shell fish, meat, milk, and cheese. The deadly action of the x ray on the different surfaces and organs of the body is fully described, and means of diagnosis and treatment are set forth, together with brief notes on anatomical findings. The volume does not end here. There are many suggestive and instructive references to the poisons generated in the human system—endogenous poisons, the author terms them, caused either by autointoxication or by the action of malignant growths, or the various infective fevers. Finally, the work is crowned with an admirable index of subjects, the principal references being figured in heavy faced characters.

The reviewer almost forgot to mention the remarkably extensive treatment which phosphorus poisoning receives. Next to that on alcoholic intoxication, this is the most important chapter in the book, a little over thirty-six pages being devoted to it, and anatomical diagrams are included in the text.

Few important errors are to be noted, and we almost hesitate to call attention to the trifling one the author makes on page 80 in confounding Javelle water with Labarraque's solution. The first named is a potassium compound and the second a sodium compound, not the reverse, as stated by him.

MEDICOLITERARY NOTES.

Occasionally we are asked by some of our friends to notice certain books or magazine articles that they believe should be brought prominently before the profession and the public. It is hardly feasible to give due attention even to the enormous quantity of literature sent in expressly for review, and, much as we should like to commend all the works worthy of professional study, it would be neither fair nor possible. We admit that there are some exceptions to this rule, but they are accidental.

* * *

A view of the crowd at any of our fashionable bathing beaches shows that the great majority of our young people of both sexes are admirably built. They are, of course, children of fairly well to do parents, are well fed, and have opportunities for scientifically devised exercise. The specimens seen at the free baths are not so beautiful. There is one unhappy and striking exception to the general physical pulchritude, and that is the almost universally deformed foot. Corns, bunions, clubbed toes, calluses, and a distorted hallux are all too common. Let us hope that the next evolution of fashion will be toward a sensible footgear. At one period of the Middle Ages there was an admirably picturesque and comfortable shoe which was broadest and highest over the toes, and the shape was exaggerated by slashings of silk in the leather. This artistic construction minimized the foot by contrast and we respectfully although hopelessly recommend it as a model.

* * *

Pope John XXI long enjoyed the credit of introducing mercury to the medical profession; he wrote of the value of Saracen ointment, which contained 12.5 per cent. of quicksilver, in phtheiriasis pubis and in scabies. In the *Commentaire* of Bernard le Provincial, who died in 1155, writes Dr. Cabanès in his *Remèdes d'autrefois*, we find an astrological reference to mercury as "humid in the fourth degree." Salernus Æquivocus wrote of the value of mercury in exterminating pediculi about 1167. Early in the fifteenth century Basile Valentin said of a decoction of mercury in guaiac *expellit morbum gallicum*. Cabanès thinks it was merely a lucky chance that led to the employment of quicksilver in syphilis; an alchemist would naturally prescribe a mysterious element for a mysterious disease.

* * *

Science will eventually analyze everything, including the sources of poetry. It is said that the sweet and engaging look of innocence peculiar to young children is due to a slight exophoria from lack of development of the internal recti. Development comes later with reading and other close work. Young physicians will do well to beware the "baby stare" which is thus seen to be due to an empty head.

* * *

Modern thought on baldness is returning to a theory not at all new, that the scholarly looking affliction is due to the constriction of the scalp by the silk and stiff felt hats, which act by cutting off the blood supply. Ointments and restorers of all kinds are useless, and, as to prevention, soft hats are prescribed and frequent brushing of the hair. We do not believe the silk hat will go. It shares with evening dress the extraordinary faculty of bringing out gentlemanly distinction of appearance as well as emphasizing the absence of that attribute.

* * *

Most histories written up to within comparatively few years are mere records of various kings and their battles. Few glimpses are afforded of the life of the ordinary people, their joys and sorrows or their manner of life. When, however, we do get some little insight into the routine existence of the great mass of the population from the beginning of our era to about the third decade of the nineteenth century, it is interesting to note that, no matter how careless people were about personal hygiene, their houses were as a rule fairly clean. Particularly was the kitchen always scoured as to both floor and utensils; some instinct taught that danger lay in dust near food. The lack of personal care discounted the housewife's precautions. The habit of washing the hands before meals, when all dipped into the same central dish, rapidly fell into disuse when forks were first introduced, as an obvious waste of time. Doubters of the shocking personal habits of our ancestors are invited to recall the circumstances under which was written Burns's poem beginning, "O wad some power the giftie gi'e us!"

* * *

Here are a few diseases—or are they aspects of the same disease?—that the "clinician" cannot study *in vitro* any more than he can gunshot wounds: Gout, rheumatism, eczema, chronic bronchitis, diabetes, Graves's disease, obesity, lithæmia, ergophobia, gravel and stone, cholelithiasis, calvities, canities, pyorrhœa alveolaris, fibroid phthisis, varix, and varicocele. They are apparently inseparable from our civilization and attack mainly our best families. Cancer is largely an aristocratic scourge; is it also a cousin of the foregoing tribe?

NEW PUBLICATIONS.

Cushny, Arthur R.—A Textbook of Pharmacology and Therapeutics, or the Action of Drugs in Health and Disease. Fifth Edition, Thoroughly Revised. Illustrated with Sixty-one Engravings. Philadelphia: Lea & Febiger, 1910. Pp. 744.

Fischer, Martin H.—Œdema. A Study of the Physiology and the Pathology of Water Absorption of the Living Organism. The 1909 Nathan Lewis Hatfield Prize Essay of the College of Physicians of Philadelphia. Republished with the Consent of the Board of Trustees from the Transactions of the College. New York: John Wiley & Sons, 1910. Pp. 209.

Pyle, Walter L., and Darier, A.—An International System of Ophthalmic Practice. Edited by Walter L. Pyle. Therapeutics. By Dr. A. Darier, of Paris. Translated by Sydney Stephenson, M. B., F. R. C. S., London, Late Honorary Secretary of the Ophthalmological Society. Illustrated. Philadelphia: P. Blakiston's Son & Co., 1910. Pp. xiv-444. (Price, $4.)

Wolter, Friedrich.—Die Hauptgrundgesetze der epidemilogischen Typhus- und Choleraforschung in Rücksicht auf die Pettenkofersche und die Kochsche Auffassung der Typhus- und Choleragenese. Auf Grund einer vergleichend-epidemiologischen Betrachtung einer grösseren Reihe von Typhus- und Cholera-Epidemien. München: J. F. Lehman, 1910. Pp. xii-337.

Transactions of the Seventh Annual Conference of State and Territorial Health Officers with the United States Public Health and Marine Hospital Service, held in Washington, D. C., on June 2, 1909. Washington: Government Printing Office, 1910. Pp. 86.

Stiles, Charles Wardell, and Hassell, Albert.—Index Catalogue of Medical and Veterinary Zoology. Parts 28 and 29. (Authors: Sim to Szymánski.) United States Department of Agriculture, Bureau of Animal Industry, Bulletin No. 39. Washington: Government Printing Office, 1910. Pp. 2169 to 2326.

Monthly Consular and Trade Reports. June, 1910 (Part II), No. 357. Department of Commerce and Labor, Bureau of Manufactures. Washington: Government Printing Office, 1910. Pp. 254.

Annual Calendar of the Faculty of Medicine and Department of Dentistry of McGill University, Montreal. Seventy-ninth Session, 1910-1911. Pp. 203.

Annual Announcement of the University of Colorado School of Medicine. Boulder, Colo. Pp. 49.

Fifth Annual Report of the Board of Managers of the Manhattan State Hospital to the State Commission in Lunacy. For the Year ending September 30, 1909. Pp. 106.

Bresler, Johannes.—Die Syphilisbehandlung mit dem Ehrlich-Hata'schen Mittel (Dioxydiamidoarsenobenzol). Zusammenstellung der bisherigen Erfahrungen. Halle a.S.: Carl Marhold, 1910. Pp. 30.

Annuaire de l'Université Laval pour l'anée académique 1910-1911. Pp. lxvii-229.

Annual Announcement of the College of Physicians and Surgeons of Baltimore, 1910-1911. Pp. 32.

Miscellany.

Number of Physicians in Germany in 1908.—The medical statistician, Dr. Prinzing, publishes in the *Deutsche medizinische Wochenschrift* some interesting statistics in regard to the medical profession in Germany in the year 1908. The physicians of Germany numbered last year 31,640, and 553 new licenses were granted. A considerable increase is to be expected soon, as in consequence of the lengthening of the medical course a few years ago the number of those who are finishing their studies is temporarily reduced. As formerly, the large cities still attract the larger proportion of physicians. Greater Berlin, i. e., Berlin with its 21 suburbs, has 3,732 physicians, and in the other large cities there were altogether 8,900, making in all 12,632, in contrast with 19,008 in the rest of Germany. For 10,000 inhabitants there were in Greater Berlin 12.3 physicians; in other large cities 9.2; in all the large cities 9.9, in contrast to 3.8 for the rest of Germany. Among the individual large cities, Wiesbaden had proportionally the most physicians, 25.8 in 10,000, followed by Munich with 15.8, Strassburg 14.2, Kiel with 13.1, and finally Greater Berlin with 12.3. Duisburg had the least (3.0). The number of licensed women physicians in Germany amounts to 55, who are all located in the large cities. In Berlin alone there are 17, in Breslau 5, in Frankfurt a. M. 5, in Munich 4, in Hamburg and Dresden each 2. Most of them devote themselves to general practice, but many to gynæcology and diseases of children. The development of specialism has made further progress. In the large cities there were in 1908 for 10,000 inhabitants, 3.44 specialists and 6.50 other physicians. Among 100 physicians 34.6 were specialists. The number of specialists has increased about nine per cent. in the large cities during the last three years, and that of practising physicians only about 4 per cent. In Greater Berlin the number of specialists has risen to 1,194 Of the single specialties, the number of physicians for mental and nervous diseases shows the greatest increase, next orthopædists and surgeons, then physicians for children's diseases.—*Journal of the American Medical Association.*

Number of Physicians in Austria in 1908.—The number of medical practitioners in Austria (in a population of 27,000,000) was 12,278 in 1908, according to official figures; that is, one practitioner for about 2,250 inhabitants—a fairly satisfactory ratio. The increase over 1907 was 2 per cent., which corresponds to the estimated increase in population of 2 per cent. per annum. Although the German speaking population is only 39 per cent. of the whole, 60 per cent. of the practitioners work among Germans because of their superior social and financial position. The proportion of medical men to the population in Austrian cities varies between 1 to 560 in Prague, 1 to 700 in Vienna, which has nearly 3,000 practitioners for 2,000,000 population, 1 to 1,600 in Graz, and 1 to 1,500 in Zara. All practitioners except a few who have been in practice for a long time have the degree of M. D.; for thirty years this degree has been required of those seeking to practise. The number of medical graduations corresponds to the number of students. The numbers of both have decreased considerably since 1894, when the seven Austrian universities were attended by 6,739 medical students, against 2,440 in 1909. In 1894, 1,088 degrees of M. D. were granted in Austria; in 1904 only 553. In the University of Vienna alone there were 323 degrees of M. D. granted in 1900; in 1908, only 157. At present, since the number of students and graduations corresponds to the annual increase in population, the prospects for medical men are not bad, especially in the country, where wealth is increasing and education becoming diffused.—*Journal of the American Medical Association.*

Official News.

Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending August 13, 1910:

Allen, A. H., Passed Assistant Surgeon. Detached from duty with the naval rifle team of 1910 and ordered to duty at the naval hospital, navy yard, New York, N. Y.

Ames, M. H., Passed Assistant Surgeon. Ordered to duty at the naval hospital, Olongapo, P. I.

Dollard, H. L., Assistant Surgeon. Detached from the *Relief* and ordered to the *Charleston*.

Fitts, H. B., Medical Inspector. Detached from the navy yard, Pensacola, Fla., and ordered to Washington, D. C. for examination for retirement.

Guest, M. S., Surgeon. Ordered to the navy yard, Pensacola, Florida, when discharged from treatment at the naval hospital, Las Animas, Colo.

Higgins, S. L., Passed Assistant Surgeon. Detached from the *Mohican* and ordered to the *New York*. Commissioned passed assistant surgeon from November 12, 1910.

Lumsden, G. P., Medical Inspector. Detached from the naval recruiting station, Chattanooga, Tenn., and directed to wait orders.

Tolfree, H. M., Passed Assistant Surgeon. Detached from the naval recruiting station, Cleveland, Ohio, and ordered to the naval recruiting station, Chattanooga, Tenn. Commissioned surgeon from March 24, 1910.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending August 20, 1910:

Bell, Leonard P., First Lieutenant, Medical Reserve Corps. Reported for duty at Camp of Instruction, Fort Riley, Kansas.

Brechemin, Louis, Colonel, Medical Corps. Granted leave of absence for four months, with permission to go beyond the sea.

Brechemin, Louis, Jr., Captain, Medical Corps. Leave of absence extended one month.

Church, James R., Major, Medical Corps. Granted leave of absence for one month, to take effect upon his relief from duty at Fort Robinson, Nebraska.

Cole, Clarence L., Captain, Medical Corps. Designated for duty with troops from Whipple Barracks, Arizona, to Camp Atascadero, California.

Cullem, Charles W., First Lieutenant, Medical Reserve Corps. Granted leave of absence for two months, to take effect upon arrival in the United States.

Farrow, Edgar J., First Lieutenant, Medical Reserve Corps. Now at Vancouver Barracks, Washington, having completed the duty assigned, will proceed to Fort Morgan, Alabama, for duty at that post.

Fletcher, John P., Lieutenant, Medical Corps. Left Fort D. A. Russell, Wyoming, for duty at Camp E. S. Otis, Wyoming.

Ford, Joseph H., Major, Medical Corps. Reported en route to Camp of Instruction at Fort Riley, Kansas.

Fuller, Leigh A., Major, Medical Corps. Reported arrival at Camp of Instruction, Fort Riley, Kansas.

Hathaway, Levy M., Captain, Medical Corps. Ordered to Camp of Instruction, at Atascadero, California, for duty.

Holmberg, Carl E., Lieutenant, Medical Corps. Ordered to Camp of Instruction at Atascadero, California, for duty.

Jenkins, F. E., First Lieutenant, Medical Reserve Corps. Reported arrival at Camp of Instruction, Fort Riley, Kansas.

Keller, William L., Captain, Medical Corps. Left West Point, N. Y., on detached service, accompanying the First Class, Corps of Cadets, to Fort Hancock, N. Y.

King, Charles T., Lieutenant, Medical Corps. Ordered to Camp of Instruction at Atascadero, California, for duty.

Kremers, Edward D., Lieutenant, Medical Corps. Ordered to Camp of Instruction at Atascadero, California, for duty.

LeWald, Leon T., Captain, Medical Corps. Leave of absence extended one month.

Nelson, Kent, Captain, Medical Corps. Upon arrival at San Francisco, California, will proceed to Whipple Barracks, Arizona, for duty.

Nichols, Henry J., Captain, Medical Corps. Upon arrival at New York City, will proceed to Peoria, Illinois, for the purpose of studying pellagra in connection with the commission organized by the Governor of Illinois.

Rutherford, H. H., Major, Medical Corps. Ordered to Fort Totten, N. Y., for duty.

Shaw, Henry A., Major, Medical Corps. Relieved from duty at Fort Slocum, N. Y., September 1st, and will proceed to Boston, Mass., for duty as attending surgeon; relieved from duty at Boston, and will proceed at the proper time to San Francisco, California, and take transport to sail from that place about December 5, 1910, for duty in the Philippines Division.

Van Dusen, James W., Major, Medical Corps. Reported en route to Camp of Instruction, at Fort Riley, Kansas.

Yemans, Herbert W., First Lieutenant, Medical Reserve Corps. Having reported in this city in compliance with orders heretofore issued, is designated as the representative of the War Department at the International Esperanto Congress.

Births, Marriages, and Deaths.

Born.

Richardson.—In San Francisco, California, on Friday, August 12th, to Captain W. H. Richardson, Medical Corps, United States Army, and Mrs. Richardson, a son.

Married.

Davis—Gregg.—In Winnebago, Nebraska, on Sunday, August 7th, Dr. S. C. Davis, of Colony, Oklahoma, and Miss Mabel Gregg.

Died.

Atlee.—In Philadelphia, on Thursday, August 18th, Dr. Walter Franklin Atlee, aged eighty-two years.

Bevier.—In Ridgway, Pennsylvania, on Friday, August 5th, Dr. Arthur B. Bevier, aged fifty-two years.

Bicknell.—In Roanoke, Virginia, on Saturday, August 13th, Dr. Guilford O. Bicknell.

Blodgett.—In Brooklyn, New York, on Friday, August 19th, Dr. Andrew Burr Blodgett, aged fifty-nine years.

Calhoun.—In Atlanta, Georgia, on Sunday, August 21st, Dr. Wellborn Calhoun, aged sixty-five years.

Campbell.—In New Germantown, Pennsylvania, on Tuesday, August 16th, Dr. Russell Campbell, aged twenty-four years.

Easley.—In Decatur, Illinois, on Sunday, August 7th, Dr. William J. Easley, aged eighty-four years.

Empzy.—In Vars, Ontario, Canada, on Thursday, August 18, Dr. William Empzy.

Hunter.—In Charleston, South Carolina, on Saturday, August 13th, Dr. B. W. Hunter.

Hutchins.—In Gulfport, Mississippi, on Tuesday, August 9th, Dr. W. T. Hutchins.

Jakway.—In Breesport, New York, on Sunday August 14th, Dr. Otis A. Jakway, aged seventy-six years.

Klein.—In Louisville, Kentucky, on Saturday, August 13th, Dr. John W. Klein, aged fifty-nine years.

Raymond.—In Memphis, Tennessee, on Tuesday, August 16th, Dr. F. S. Raymond.

Redding.—In San Francisco, California, on Monday, August 8th, Dr. George Herbert Huntington Redding, aged fifty-two years.

Stanbro.—In Prattsburg, New York, on Wednesday, August 10th, Dr. H. L. Stanbro.

Stewart.—In Unadilla, New York, on Sunday, August 21st, Dr. William B. Stewart.

New York Medical Journal

INCORPORATING THE

Philadelphia Medical Journal and The Medical News

A Weekly Review of Medicine, Established 1843.

VOL. XCII. No. 10. NEW YORK, SEPTEMBER 3, 1910. WHOLE No. 1657.

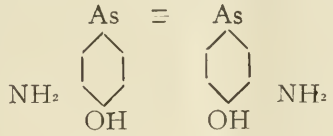
Original Communications.

THE TREATMENT OF SYPHILIS WITH EHRLICH'S DIOXYDIAMIDOARSENOBENZOL.

BY WILHELM WECHSELMANN, M. D.,
Berlin, Germany,

Sanitäts-Rat, Physician in Chief to the Dermatological Department of the Rudolf Virchow Hospital.

For some years past Dr. Paul Ehrlich, director of the Royal Institute for Experimental Therapeutics at Frankfort, has been engaged in an effort to discover some chemical substance of value in those infectious diseases in the treatment of which the forces of nature have been insufficient, and in which the supplying of specific antibodies is without effect. For this purpose he has produced hundreds of preparations which have been tried on infected animals. All these substances, unlike the antibodies, are poisonous, that is, they attack not only the protoplasm of the parasites, but the organs of the body as well. It has therefore been necessary to find substances which would destroy the parasites or, what has the same therapeutic effect, make them unfit to propagate—called by Ehrlich sterilizatio magma—but which do not act as poisons for the body of the patient in the doses required to kill the parasite. Among many hundreds of such preparations made the dioxydiamidoarsenobenzol,



proved to fulfil these conditions best in its effect on the spirilloses of animals.

Dr. Hata, whom Ehrlich had entrusted with these experiments, found that after administering this substance the spirilla of chicken spirillosis and of recurrent fever would disappear immediately, and especially that the primary affection of rabbits full of spirochætæ, in which the disease had been experimentally produced would heal quickly, and the animals become free from spirochætæ within twenty-four hours. To make it possible to introduce this remedy in the treatment of pathological conditions in man, Dr. Konrad Alt, of Uchtspringe, made many experiments on paralytics which showed that the substance, which monkeys were without exception able to stand when given in a dose of 0.15 gramme to each kilogramme of weight (Ehrlich), would not exert a poisonous effect in man in doses of from 0.3 to 0.5 gramme. Iversen was then able to report gratifying results in recurrent fever, and Schreiber observed that the symptoms of syphilis disappeared very quickly under treatment with the drug. In March of this year Ehrlich sent me the remedy for further examination. I soon determined that, in some cases, a cure was possible in syphilitic infants so saturated with spirochætæ that they were sure to die, and, furthermore, that post mortem examinations of such infants showed no evidence of any effect of the arsenic upon the internal organs. At that time there was great distrust felt against new arsenic preparations. It was therefore necessary to prove that the new remedy was far superior to other remedies in its effects and I tried it in incurable cases only.

CASE I. W. D., eighteen years of age, was admitted to 1906 into the Municipal Hospital for treatment of lues maligna, which could not be cured with calomel injections or the Zittmann treatment. When the Virchow Hospital was opened he was transferred to one of the wards of Dr. Buschke. In his history of the case, I found that the patient, in October, 1906, suffered from large syphilides on his body, ulcerative destruction of the organs of the throat, swelling of the bones, and especially deep ulcers, which were situated on the lower side of the glands, some of them as large as a pea. Treatment by inunction, saiodin, calomel injections, arsenic (pillula asiatica and injections), steam and sulphur baths, and potassium iodide were all tried. Since February, 1907, the patient had for weeks a temperature which rose as high as 102° F.

It became necessary to apply anæsthesin to the throat on account of the difficulty experienced in swallowing. During March, he received two courses of inunction treatment. On April 28, 1907, the efflorescences were partly healed, partly granulating, while on the head they remained unchanged, the uvula had fallen off. Zittmann's treatment and iodipin were used. From April 28th to May 7th, he received injections of corrosive sublimate. On May 23d three atoxyl injections, each of 0.2 gramme, were given, and two inunctions. On June 7th the patient left the hospital, refusing further treatment. The throat showed very large cicatrices, and the syphilides of the skin had disappeared with the exception of efflorescences of the size of a quarter on the buttocks.

On June 12th he went to the Charité on account of the reappearance of the skin trouble. He received ten atoxyl injections and six calomel injections. In November he went to the Lichtenberg sanatorium. There he received thirty-two inunctions, potassium iodide, and saiodin. In April an ulcer again appeared on the penis, which slowly grew larger. On May 20, 1908, he was sent to the Virchow Hospital. There he received injections of arsenic and calomel, casein iodide, potassium iodide, and mercurial inunctions. On August 31st, being somewhat better, he left the hospital. During November and December, 1908, he received calomel in the Charité. From February to June, 1909, he was treated with inunctions in Lichtenberg. In August, 1909, he was again in the Virchow Hospital. From October to December, 1909, he was treated in Lichtenberg with inunctions and calomel. From January to March, 1910, Dr. Max Joseph treated him with mercurial inunctions and potassium iodide.

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On April 2, 1910, he was admitted to my wards. The patient was in a very bad condition. He showed on the inner side of the thigh a bluish red area of the size of the palm of the hand, partly scarred, partly ulcerous, and on his head a similar patch with serpiginous ulcerations. There were several thickenings of the bones. The entire skin of the glands was covered with ulcerations. This ulceration also appeared on the ventral aspect of the penis, attacking not only the skin but also the fascia; there were only small islands of skin of the size of a lentil. The patient admitted that since the beginning of his disease, in 1906, the skin of the penis had been for only a few days very superficially healed.

On April 14, 1910, he received 0.25 gramme of Ehrlich's 606. His temperature was 100.5° F.; his general condition was good, with the exception of very severe pain. He also received a morphine injection.

On April 14th his temperature ranged from 99° to 100.5° F. General condition good. Morphine injection given.

April 15th: Temperature, morning, 99.5°; evening, 102.7° F. General condition good. Morphine injection given.

April 16: Temperature, 99.5° to 101.3° F.

From April 17th his temperature became lower, and he was without pain. Recovery set in rapidly. On April 20th the ulcer on his head and the region on the thigh had nearly healed; the ulcerations of the penis became smaller and cleaner.

On May 9th everything was healed and the patient left the hospital. On May 20th, the scar of the penis had become eroded on the upper margin, as the patient had paid no attention to it. The condition of the penis was not so good. The patient was in a much better condition. On April 6th his weight was 50.5 kilogrammes; April 16th, 50; April 23d, 48.5; April 30th, 50; May 7th, 51.3.

It was manifest that the doses in this case had been too small, as the patient again appeared on June 26th; the scar of the penis was again open and a swelling of the lower end of the right radius existed, although his general condition was good and all the other symptoms had subsided. A second injection of 0.4 gramme reduced the swelling of the bone in two days and caused the ulcers on the penis to begin healing. A full cure of the penis could not be effected for mechanical reasons, as there was a good deal of skin missing.

A very similar history is recorded in the following case of incurable lues:

Case II. F. S., twenty-five years of age, a working girl, was, in July, 1905, affected with lues and had received several inunctions and injections in the Charité. For years she had not been able to hold her fæces. On May 5, 1909, she was received in my wards of the Virchow Hospital in very poor condition. She had a number of foul ulcers, each about two thirds of an inch deep and five inches long, arcuate in form, mounting from the posterior commissure high upon the nates. There could be seen a few evidences of healing in the form of atrophic scars on the margin of which the progressing ulcers were located. The rectum was very much infiltrated and showed two strictures which hardly admitted a finger and upon which deep ulcerations were visible. Wassermann reaction + + +; weight, forty-five kilogrammes. She received five calomel injections, but they had to be given up on account of diarrhœa. Potassium iodide was continually given. From May 12th she received inunctions; the incontinence was somewhat improved; weight, forty kilogrammes. The ulcers received treatment with the Röntgen ray. The patient left the hospital on July 3d, although her condition was hardly improved, but returned after four days' absence. She then received calomel injections and local treatment with calomel, as she could not very well stand metallic mercury. On May 4th, the patient received 0.3 gramme of Ehrlich's 606. After a few days a cleaning up and healing of the large abscesses commenced, and on May 18th the ulcers were entirely healed with the exception of a few very small places on the right side. At the same time the condition of the rectum improved and the rectoscopic examination showed only a simple erosion on the stricture. The general condition was very much improved; the weight remained at forty kilogrammes. After a second injection the small erosions of the right side were almost entirely healed.

Case III. A. P., twenty-three years of age, showed seven months ago the first effects of syphilis; four weeks later there appeared eczema. From November 28, 1909, until the middle of March, 1910, he received thirty-five injections of mercury salicylate and calomel. For the past three months he had suffered from pains in both knee joints. On May 5, 1910, the patient was received into my wards in a very poor condition. He was very much emaciated, and his skin had the appearance of that of a corpse. The face looked like a Death's head with an expression depicting the highest pain. The whole body and face were covered with ulcerations, incrusted, which reached through the skin into the subcutaneous tissue, together with scars. There was a fœtid smell from the nose. The septum was perforated; the left concha and vomer were ready to drop off. There were large ulcerations in the nasopharyngeal, and the uvula was destroyed in its left side. The patient could hardly swallow, on account of the extreme pain, and had to be fed by injections through a tube. The pulse was very small and of poor quality, 120 and over. We did not dare to give an injection, but, as his condition grew steadily worse under iodipin injections and as the end was to be expected in the very near future, 0.4 gramme of Ehrlich's 606 was injected on May 21st. The temperature did not rise and the pains did not amount to much. After two days there appeared a great improvement in his general condition, and on May 26th the beginning of a cure was everywhere apparent. On May 30th the uvula had healed. The ulcers were entirely healed. The bony support of the nose had been thrown off *in toto;* the fœtor had disappeared. On June 7th the patient could swallow and could walk around. His weight was on May 21st, 41.5 kilogrammes; on June 5th, 42.5; and now 57 kilogrammes. He was discharged as cured.

From then on all syphilitics were treated with the new remedy, and the symptoms disappeared nearly always very rapidly. So far, I have treated over 600 patients. The erosive chancres become clean after from twelve to twenty-four hours and heal rapidly; in pronounced sclerosis the cleaning process is of the same rapidity, but absorption takes longer. In four cases there appeared after the healing of the primary lesion an exanthem which healed spontaneously in two patients in whom it appeared on the first and seventh day after the injection; the two other patients received a second injection. Mucous patches of the mouth heal in from twenty-four to forty-eight hours, even if the patient is an inveterate smoker. The roseola disappears in a few days, as do also the malign ulcerous syphilides, the rupia, the watery papules, the small papulous syphilides, which are otherwise so pertinaceous, and the gummata. Slower is the disappearance of the large papulous syphilides, and for these a second injection becomes sometimes necessary. Very favorable are the effects on syphilis of the bones; especially the night pains of the bones disappear as by magic.

Case IV. A very sensitive patient had suffered for five years from pains in the bones and used all kinds of treatment. He had a large swelling of the distal end of the ulna, which showed in the Röntgen picture a severe periostitis and an abscess filled with bony detritus. Although the intragluteal injection of Ehrlich's 606 was very painful, he stated that the night following it he had for the first time had a full night's rest.

Case V.—A second patient, who had severe nodular skin syphilides which could not be overcome with mercurial and arsacetin treatment, stated that for the last year and a half he had had such severe pains in the tibiæ that he had injured his teeth in closing them while in pain. He stated that he had previously suffered from a severe, very painful articular rheumatism, but these pains could not be compared with the osteocopic pains. During the second night following the injection he was without pain.

Case VI.—A third patient, of herculean build, had become infected eight years before, in the tropics, with syphilis and malaria. Since then he had constantly used antisyphilitic treatment consisting of mercury and iodine, once also of atoxyl; but still he had bony swellings of the skull

with such intense pain that he injected daily three grammes (!) of morphine. The pains stopped entirely during the night following the injection of Ehrlich's 606, and on the second day he visited the race track and began, of his own accord, to reduce his morphine.

This sudden stopping of the pains at certain hours can be explained only as the result of a killing of the spirochætæ, as the peculiar appearance of the pains in the bones during the night's rest can be explained only as a biological demonstration of the parasites.

In view of experience with other arsenical preparations, we could not but fear for the optic nerve. We therefore see that every patient has his eyes examined by a specialist before we give the injection. In cases in which there are changes in the optic nerve—a circumstance which quite often occurs—we have not given an injection.

According to animal experiments, as Sanitary Councillor Ehrlich tells me, a toxic influence upon the optic sphere is not very probable. It has been demonstrated that some aromatic arsenical derivatives produce in mice peculiar disturbances of coordination, these mice become dancing mice. Rötig has proved that these dancing mice show degenerations of the vestibular nerve, and some of them degenerations of the optic tract. These changes do not appear with the new remedy. But a clinical observation seems also to favor the opinion that 606 can be used even in cases of diseased optic nerves. One of our first patients had not been examined for her eyes. After the injection it was found that she had received in my wards an inunction treatment, at which time the optic nerve on each side had had a dim margin and was venously hyperæmic (neuritis optica). The patient remained without any pathological affection of the fundus oculi and retained her full vision (Dr. Fehr).

Lately we have also seen that patients who have been treated with atoxyl or arsacetin stood 606 very well; in these cases also there was not observed any affection of the ocular organ, and this refers to several thousand cases. But I do believe it is judicious not to use 606 when the retina is affected.

Visceral lues also shows quick recovery, especially syphilis of the testicles and of the brain (epileptoid attacks). Icterus which has existed for a considerable time disappears in ten days. Syphilitic growths of the larynx which had produced such severe dyspnœa and stridor that the case was received as one for tracheotomy disappeared quickly and remained only as solid infiltrations, which were treated four week later with a second injection; and œdema of the larynx, of which we were very much afraid at first, did not occur. Two patients with tumors from cerebral lues stood the injections well, although the symptoms were very severe. The same was the case with two patients who had only lately suffered a luetic apoplexy and a patient with a luetic apoplexy a few weeks old; these three cases plainly showed improvement. How quickly and how well the remedy influences all syphilitic processes in the brain may be shown by the following history of an educated patient who was carefully observed and whose eyes were continually examined by Dr. Fehr:—

Case VII.—E. H., thirty-five years of age, a bookkeeper, had become infected in 1899 and had received mercurial injections for nearly six months. In 1904 there appeared right double vision with paresis of the abducens. A leading oculist diagnosticated this as severe, treated it with prisms of 6, 8, and 10 bases, and cured it. This abducens paresis recurred in April, 1907, and was improved under similar treatment. The patient said: "In the spring of 1908 I observed a diminution of the vision of the right eye; the left remained perfect. Geheimrat S. observed pupillary sluggishness. I did not stand a treatment with iothion and saiodin well. The vision of the right eye did not improve; on the contrary, the usual print of a newspaper appeared like diamond print and, besides, very indefinite. I was discouraged and intended to work with the left eye as long as I could and then to make an end of myself, as soon as the vision of the left eye should also be lost, which, as it had to perform the duty of both, became worse. I have never interrupted my vocation, which involves a severe strain upon the eyes, and have performed my duties for the last year and a half with the left eye only. On June 21st Dr. Fehr diagnosticated rigor pupillæ in both eyes with reaction of accommodation, and a slight weakness of the abducens, which was more severe in the right than in the left eye; otherwise, motility was good.

"On July 5, 1910, 0.55 gramme of Ehrlich's 606 was injected. On July 8th, there was a vestige of the pupillary and ciliary reactions to light. On July 10th (Sunday afternoon) I did not personally perceive any improvement in my eyes. The amazing change took place in the night from July 10th to 11th. Early on July 11th I could quite clearly recognize newspaper print and the contours of buildings. On the same day the reaction of the pupils to light was plain. On July 15th the reaction of the pupils was slow but plainly existed (without light). The fundus oculi was normal. To-day I can see very well with the left eye and with the right eye quite well at a distance; newspaper print and writing I can read distinctly, although the eye is somewhat strange and the contours of the letters throw a small shadow. I daily observe an improvement, as the injection was performed on the 5th and to-day is the 17th."

As to the parasyphilitic diseases, I have not observed clear results in cases of progressive paralysis, although I am of the opinion of Alt, that a trial should be made in early cases. At all events, a favorable influence will be produced upon the symptoms of lassitude, depression, and abnormal irritability which occur early and quite threateningly.

In tabes also a quick improvement has been plainly noticeable. Altogether, the tabetics are very well satisfied. In the beginning I had to refuse them any treatment with 606, as I did not expect any results and have treated them only during the last few weeks. Some symptoms seem to improve in some cases; for example, the girdle sensation; the dull headache which had existed for years; very severe intercostal neuralgias; in one case weakness of the muscles of deglutition, which had existed for a number of years and which produced difficulty in swallowing dry nourishment. Diminished potentia coeundi was in one case so improved that foolishly daily intercourse was accomplished. A debility of the sphincter vesicæ which had existed for eight years, and on account of which diurnal incontinence occurred, while upon a sudden impulse immediate evacuation of the bladder took place, disappeared a few days after the injection. In two cases an improvement of the rigor pupillæ was shown, also an improvement of the disturbances of sensibility. Furthermore, some patients state that their gait is improved.

In advanced cases we cannot hope for success, but we must not forget that there exist in paralysis and especially in tabes, besides the process which cannot be repaired, such as scleroses of certain systems, syphilitic lesions, especially of single vessels,

gummata, meningitic growths, particularly in the atypical forms of tabes, pseudotabes, where an improvement is possible. It is evident that such an improvement is of the greatest import for the patient even if the improvement occurs in small, circumscribed locations in an organ, as, for example, the spinal column, where so many important nerve courses are crowded together in the smallest space. Several observers, such as Truffi, Pazini, and especially my assistant, Dr. Siesskind, have proved that the spirochætæ disappear from papules and primary affections, in some cases after twenty-four hours, while in other cases they still exist after days, even if they are swollen and very little movable. Iversen has lately made similar observations in preparations of glands.

The Wassermann reaction usually disappears, as has been stated by Alt, and my assistant, Dr. Lange, has found that a time from eight to forty days is necessary to produce this effect, according to the primary severity of the reaction. In some of the cases this reaction has not reappeared so far. In five cases of absence of the Wassermann reaction, in absolute lues, a positive reaction appeared after the injection, to disappear again. I take such cases to be those of obscure reaction in which collections of quiet spirochætæ have been set free by the injection and have carried their specific matter into the circulation. These observations are very much in favor of a specific factor in the Wassermann reaction.

I have not observed bad after effects of importance, but it has been found that otherwise light infections, such as those with coryza or angina, even if they appear on the ninth day, are accompanied with very high fever, with a temperature from 104° to 105.8° F. Patients with a weak heart should therefore be carefully guarded; besides, in such cases the injection seems not to be without danger. Otherwise, the influence of the remedy appears generally to be of an exciting and invigorating nature. It can therefore be given with benefit to very miserable patients, as, for example, to the tuberculous, in contradistinction to mercury.

I have not observed widespread and severe recurrences, such as occur after mercurial treatment. I have seen only a breaking out of the disease in single localities, which probably could not have been reached by the first injection of the remedy, the capillaries having been occluded by endarteritis. The recurrences which have been reported by other observers have, I am sorry to say, not been described in full detail. Isolated cases have remained refractory and made a second injection necessary, which was then successful as in cases of recurrence. Although, naturally, it cannot be positively stated whether it will be possible to cure syphilis permanently, we are full of hope that we shall be able to do this in certain cases.

As to the technique, Iversen and Schreiber prefer the intravenous administration, which, carefully carried out, is painless, but is followed by a chill, vomiting, and fever. I therefore prefer the subcutaneous administration according to the method as developed by Lange and myself:

Dioxydiamidoarsenobenzol is dissolved by triturating in a mortar in from 1 to 2 c.c. of a soda solution, when, by adding acetic acid in drops, a fine yellow paste is precipitated. This precipitate is then made sterile and dissolved in from 1 to 2 c.c. of distilled water, and neutralized by the addition of 0.1 normal soda solution or 1 per cent. acetic acid, according to a very carefully ascertained reaction with litmus paper. The absence of pain depends upon the exactness of this neutralization. The deposit is centrifugalized and the paste which has been deposited at the bottom of the glass is shaken up with a physiological sodium chloride solution. This mixture is drawn into the syringe and slowly injected subcutaneously below the shoulder blade in a place which has been made aseptic and treated with tincture of iodine. The injection does not produce a sensation of pain, but a few hours later there will occur a nervous pain of varying but not excessive degree. On the third or fourth day there will appear a reactive swelling of a varying degree, sometimes with reddening. I have never seen pus formation. The temperature does not rise at all or rises only very little.

72 Luetzowstrasse.

THE PSYCHOPATHIC WARDS AT BELLEVUE; THEIR FUNCTIONS AND AIMS.*

By M. S. Gregory, M. D.,
New York,
Resident Alienist, Bellevue Hospital.

So great and so widespread has been the misunderstanding of the work and scope of the psychopathic wards of Bellevue Hospital, not only among the laity but even among the medical profession, that when your president invited me to read a paper before your society, on the Functions and Aims of the Psychopathic Wards, I was pleased to avail myself of this opportunity to come before you, and I shall try, in the time allotted me, to give you a brief outline, of what we are trying to do in this department of Bellevue Hospital.

Before entering, however, upon the present situation, and in order, perhaps, to show you the origin of some of the misunderstandings of which I have spoken, and the later developments that have entirely done away with most of the causes for criticism, many of which were perhaps only too just, it will not be amiss to sketch very rapidly the history and development of this department.

Prior to the year 1879, there was no provision in any general hospital for the care and treatment of the mentally disordered. In his *History of Bellevue Hospital*, Dr. Robert J. Carlisle tells about these patients, often most refined and educated, who were kept in the so called "alcoholic cells" in the basement of the hospital building, in the company of the city's inebriates, its cases of delirium tremens, and among its criminals. It is true that attempts were made to have these patients sent immediately to the city insane asylum, but for obvious reasons there were many delays, and thus the intolerable condition of affairs became so evident that a change had to be brought about.

In this year, the first pavilion for the insane was

*Read before the East Side Medical Society, February, 1910.

erected, with the purpose, however, of merely separating those with mental diseases from the alcoholics and criminals for a few days, until the necessary steps could be taken for their transfer to the city asylum. No attempt was made to treat them; there were no facilities. There was no resident physician, and no nursing staff worthy of the name. The latter were mostly recruited from the semi-recovered alcoholics and from the inmates of the lodging houses, whose ability was commensurate with the pitifully meagre wages which they were eager to accept.

The advantages obtained in the erection of this new building were definite, but had little reference to the amelioration of the mental health of the patients. They were separated from the sordid environment of the alcoholics, but that was all; it soon became apparent that such a system could not exist, since intolerable conditions arose from the lack of constant supervision of this—for the most part irresponsible and unreasonable class, and from the particularly unfit type of the nursing force. It was during this era that much of the ill odor attending the "insane pavilion" arose, and which gave origin to the traditional prejudice from which we still suffer.

In 1882 an advance step was made in the appointment of a resident physician. But with the old equipment, and the lack of provision for nursing, conditions did not very materially improve. There were practically no records kept of these patients during a period of fifteen years.

Notwithstanding all that experience should have shown, when in 1898 the new and present building was erected, the idea that the psychopathic wards should simply act as a transfer station to the State hospitals still seemed to be in the minds of those who planned the new wards, with the result that the accommodations provided were woefully inadequate to meet the growing demands of the increasing population. Four years later, in 1902, the Department of Bellevue and Allied Hospitals was created as a separate branch of the city administration and placed under the management of a board of trustees. A radical reorganization of the entire hospital system was undertaken by this newly appointed board of trustees, and naturally the psychopathic wards shared in the reorganization, and its development along modern lines of psychiatry was made possible. But it had to work out its own salvation under considerable difficulties. The building, although new, was totally inadequate and ill adapted for the special problem of mental diseases. The wards were uninviting and without cheer, while screens and window bars and peep holes gave a mediæval prison aspect to what should have been a modern hospital ward. The noisy and quiet patients were thrown together; bath, toilet, and office facilities were very meagre.

By the appointment of a resident physician in 1902, who lived in close touch with the wards, and two assistants who had experience in the care and treatment of the insane in the State hospital service, the patients for the first time received adequate medical attention. The old system of ex-alcoholic ward attendants and nurses was abolished, and high grade experienced nurses from the State hospital service was substituted, whose compensation, from forty to fifty dollars a month and maintenance, enabled one to choose them for their efficiency, intelligence, and sobriety. The wards were remodeled to permit a partial segregation of the noisy, the bars and wire screens were removed as far as was compatible with safety, comfortable and attractive furniture and wall decorations were added, and every attempt was made to give the ward an attractive and pleasing appearance. Belts, cuffs, camisoles, and all forms of mechanical restraint were abolished, and the indiscriminate use of narcotics was stopped. New bathing facilities and provisions for hydrotherapy, continuous baths, etc., have been added within the past two years, and plans for a new addition to the building have just been authorized which will materially increase our ward capacity and will make it possible to definitely separate the noisy from the quiet patients.

Further, female supervising nurses have been put in charge of the male ward both day and night, with most beneficial results. Thus, although still suffering from markedly cramped quarters, which compels us to pass our patients through, with great rapidity, to hospitals, private sanatoria, and State hospitals, yet we have developed a true hospital ward in every sense of the word, where treatment, to a limited extent, can be carried out, and the city's poor, suffering from mental disorders, can obtain some of the benefits which are meted out to their often less deserving brothers and sisters.

With such an equipment as we now actually possess, and with additions which are in progress, what can the psychopathic wards reasonably be expected to do for these thousands of patients that are coming in increasing numbers year by year? Statistics are usually wearying, so I shall only state that more patients are passing through the psychopathic wards of Bellevue Hospital every year than in any other similar institution in the world. Fully 3,200 cases a year are treated, and we must turn away at least 1,000 more.

What can we do for all these patients? For the majority, we can only give care and treatment for from three to five days, until they can be transferred to the splendidly equipped and thoroughly modern State hospitals. It is hardly necessary to state that the vast majority of these patients require the immediate care and treatment which can be afforded only by a State hospital, located outside the limits of a great city. Fresh and invigorating air, ample room, freedom from overcrowding and disturbing noises, and proper employment and diversion—some of the most important factors in the treatment of the insane—can only be adequately attained in a hospital situated in the country.

While this is true, yet the value of the care and treatment which these patients receive during their short stay at the psychopathic wards, at the most acute stage of their disease, can scarcely be overestimated. We all realize the great value and desirability of proper treatment at the very onset of physical diseases, but we have been rather slow in appreciating its even greater importance with regard to mental disorders.

Unfavorable conditions and surroundings at the

very beginning of a psychosis, at least in a certain proportion of cases, cause serious damage, intensify the disease, and retard recovery.

One purpose of the psychopathic wards, then, in the case of these patients, who must be transferred to the State hospitals, is to institute the proper care and treatment as early as possible, which can later be continued.

Another, perhaps even more important function and aim of the psychopathic wards, is to provide care for a class of patients which has been hitherto entirely neglected. I refer to patients whose psychoses are of such a character that they cannot be legally committed to a hospital for the insane, e. g., cases of alcoholism, hysteria, epilepsy, deliria, transitory attacks of confusion, excitement, etc. These patients can be cared for in no other place. Owing to the peculiar and disturbing character of their disease, general hospitals are reluctant to receive them, and they drift along until their malady becomes so intensified that they must inevitably come into conflict with the law, and find their way to jails, workhouses, or insane asylums.

These patients can and should be saved. It is one of the most important functions of the psychopathic wards to render proper care and treatment to this class, as such treatment will frequently relieve the community of what might become an objectionable class, making them self supporting and in some instances helpful to those who are dependent upon them.

There were nearly 350 cases out of a total of 3,212 admissions to the psychopathic wards during the year 1908 which came under this class. There were fifty-five patients suffering from hysteria and hysterical psychoses; sixty, epileptic mental disturbances, such as postepileptic confusion, excitement, equivalents, etc.; twenty mild depressive states; thirteen transitory attacks of confusion and excitement; thirty-seven psychoses due to, or following, infectious, toxic and exhaustive disease, such as typhoid fever, influenza, rheumatism, scarlet fever, pneumonia, pulmonary tuberculosis, diabetes mellitus, uræmia, erysipelas, etc.; fifteen cases, in which the mental disturbance was directly due to infection and exhaustion incident to childbirth and puerperal states; seventy-five cases of alcoholic and drug psychoses; fifteen organic diseases of the brain, such as cerebral hæmorrhage, syphilis, gummata, etc.; thirty-five of constitutional mental defect, or inferiority; and twenty-five patients suffering from mild attacks of dementia præcox. Patients of these latter two groups, namely, constitutional inferiority and mild dementia præcox, although suffering from permanent mental disability, are able to get along in the community until some unusual occurrence places them out of harmony with their surroundings. These patients, under short and appropriate treatment, may often be enabled to regain their former mental equilibrium, and adjust themselves to their environment as previously. It should be borne in mind, however, that the patients above enumerated were only those who actually were admitted to the psychopathic wards. In addition, there were a great number of similar cases, of less severe type, which sought admission, and owing to our present limited facilities, had to be turned away. On the other hand, nearly 130 patients, or over six per cent. of the commitments to the State hospitals, during the past year, were suffering from psychoses of such a type that, had our accommodations permitted and had not been taxed to their utmost, they could have been treated at the psychopathic wards. They were sent to the State hospitals because there was no alternative, although it was realized that they would recover in a short time.

The cramped and overcrowded condition of the psychopathic wards, and our inability to keep these patients under treatment until they have fully recovered, suggested the establishment of a clinic for mental and nervous diseases in connection with the Out Patient Department of Bellevue Hospital. The main object of such a clinic was to afford treatment to hundreds of patients who come to the psychopathic wards for examination, and who, owing to legal restrictions, and the mild type of their malady, are not proper cases for commitment to State hospitals. This clinic was established two years ago and has rapidly grown to large proportions. It is open every Thursday afternoon from 2 to 4. Patients, when discharged from the psychopathic wards after a treatment of several days which gives us an opportunity to closely observe their disorder, are instructed to visit the clinic weekly or less frequently, as their condition may require; they thus are enabled to receive treatment and advice, and at the same time, follow their daily vocations and support themselves and those dependent upon them.

Another purpose of this clinic is to induce relatives and friends of the patients who are suffering from mental disorders, to at once bring them to the hospital for examination and treatment. Although they evidently appreciate the necessity of hospital care for these patients, yet they seem to be unwilling to bring them to the psychopathic wards, because of the lingering prejudice which seems to be innate in the human mind against hospitals for the insane.

One of the most crying needs, at the present time, in the treatment of mental disorders, to my mind, is to be able to bring these patients under proper treatment as early as possible. Because mental and nervous diseases are insidious and gradual in their onset, and because in the beginning most of the symptoms are more or less subjective in their character, such patients do not seek relief until their malady has made considerable headway, requiring, therefore, prolonged and protracted treatment. This I think, is largely responsible for the erroneous but prevalent idea among the laity and to some extent among physicians, that nervous and mental diseases are chronic and more or less incurable, and that little or nothing can be done for them. The fact is, however, that if these patients are brought under supervision and treatment very early, they frequently respond to treatment as readily as in other diseases. One of our aims in this clinic, therefore, is to provide a place, where patients suffering from mental and nervous diseases, may at once be brought by timid and distrustful relatives, at the very incep-

tion of the disease, to the threshold of the psychopathic wards.

Moreover, a great number of patients with mild psychoses and of borderland conditions who presented themselves for treatment in this clinic suggested to us the possibility of a vast field for preventive and prophylactic work in mental and nervous diseases.

The tendency and goal of modern medicine is in the direction of the prevention of disease rather than its cure, and I think, the time has come to do prophylactic work by educating the public in this branch of medicine, just as it has been done in the recent crusade against tuberculosis. Such educational work has robbed this disease of its terrors, so that consumption is no longer regarded, in the lay mind, as a uniformly fatal disease.

The most fruitful source of mental and nervous disorders is disregard of the rules of mental hygiene, concerning which the public is entirely in the dark, and to which physicians rarely attach any significance. As in the case of tuberculosis, very little can be accomplished by simply diagnosticating the disease and giving advice, unless the patients are also taught how to avoid the conditions which still exist, and which have contributed to their disorder. It is a well known fact that the mind can deteriorate by persistent morbid and unhygienic habits of thought and by reason of influences and surroundings which are not conducive to rectifying this unhealthy mode of thinking.

A mistaken idea held by a neurotic patient, with home surroundings which, unintentionally, perhaps, accentuate the condition, will be the foundation, frequently, for a very grave mental disorder. Therefore, in doing preventive work in the treatment of mental and nervous disorders, it is not enough to merely consider the individual and his mental make up, but the treatment must also include the regulation of his mental life at home and in his business surroundings. The correction of trivial misunderstandings in the family life, and the home attitude toward the patient and his illness, or a complete removal of the patient from his former surroundings, if necessary, may frequently be sufficient to prevent a serious breakdown in a neuropathic individual.

By the aid of the Social Service Department of the hospital and through the munificence of wealthy friends, who have kindly provided a special nurse for this purpose, we have been endeavoring to carry out this preventive work as far as our limited facilities have permitted. Proper cases selected from the clinic are assigned to this nurse, who investigates the home and business surroundings, and finds out under what difficulties the patient is laboring; then, under the direction of physicians, as the exigencies of the case demand, the faulty conditions are corrected as far as possible. Results from this work have been fruitful beyond expectation. The field is vast, and the difficulties almost insurmountable, yet results have been so gratifying that they have furnished an incentive for further work along these lines.

How can the services of the psychopathic wards be utilized by the public and the medical profession? There appears to be considerable haziness as to the modus operandi of having patients admitted to the psychopathic wards. This arises from the unfortunate fact that the law assumes to dictate, not only who is insane, but the manner in which patients should be brought to the hospital for treatment.

As you all know, when patients become afflicted with mental diseases, unlike ordinary medical or surgical cases, they not infrequently fail to cooperate with efforts to bring them under treatment, but often even resist, and it is necessary to compel them to submit to treatment against their will. Consequently, the necessity of legal proceedings.

At the present time, patients may be admitted to the psychopathic wards in three different ways:

First. As voluntary patients. When a patient is quiet and orderly and willing to come to the psychopathic wards and remain there for examination, it is unnecessary to take any legal steps. Such patients may be brought to the hospital in the same way as ordinary medical and surgical cases.

Second. As prisoners. When a patient is acting in a manner which would be "disorderly in a sane person"—to quote the language of the law—and is unwilling to come to the hospital, his mind being clear enough to resent any interference with his liberty, his friends have no legal authority to bring him to the hospital against his will, and even if he were brought to the psychopathic wards, we should not have the legal right to admit and detain him. This last point must be emphasized, as patients are frequently brought to the hospital under some subterfuge, and when they reach the hospital we are expected to hold the patient against his will. In such a case we should be compelled to refuse admittance, which would only result in considerable difficulty and annoyance to the relatives as well as the patient. Whenever such a patient refuses to go to the hospital, as already intimated, it is necessary for the friends to notify a police officer, who will place him under arrest, making a technical charge of insanity against him, and bring him to the hospital, thereby complying with the legal requirements.

Third. Patients committed by a city magistrate for examination. In cases such as paranoia or similar conditions, when a patient refuses to go to the hospital, the police officer may refuse to arrest him, as the patient does not, in the presence of the officer, "act in a manner which would be disorderly in a sane person." In these cases it is necessary for the relatives to appear before a city magistrate and to submit evidence regarding the irrationality of the patient. A note from the family physician that such a patient is irrational and should, in his opinion, be committed for examination, may greatly aid in securing the warrant which the magistrate issues for the apprehension of the patient. If the magistrate, after a personal interview with the patient, is then satisfied with the evidence produced, he will commit him to the psychopathic wards for mental examination, for a period not to exceed five days. This latter is the strictly legal procedure, and should be followed when there is any dissension among the family and friends regarding the sanity of the patient or whenever there is any question of property rights.

The necessity for police interference in the trans-

portation of the insane to the psychopathic wards, as has already been intimated, is extremely unfortunate, as it frequently excites insane patients, who, as a class, are most suspicious.

Plans are under way to bring about a decided reform in the method of transferring patients to the psychopathic wards. In a short time, perhaps, we shall have a special conveyance in charge of trained nurses, who are also deputized as special officers, to transfer insane patients to the psychopathic wards. This method will eliminate the police with their uniforms and often harsh manners in the transfer of patients.

Conclusions.

Before concluding, I venture to make a few observations which have suggested themselves, as a result of my experience, for the past eight years, in the psychopathic wards of Bellevue Hospital.

First: People suspected of mental trouble should not be deceived. I have already pointed out that pretexts are used to bring patients to the psychopathic wards. Such deception intensifies their suspicions, and frequently makes the patients extremely excited and unmanageable. The idea that one should agree with their delusive fancies and unreasonable demands in order to calm them for the moment is false. They will later discover the deceit, which will tend to fix their delusions and make them distrustful. This is a matter of daily observation in our service.

Second: A patient who has been heretofore temperate and who suddenly begins to indulge in alcoholic drinks to excess should not be regarded, necessarily, as an alcoholic, especially if there is complaint on the part of his family that he appears to be mentally unbalanced. Inebriety may often be only the expression of an incipient psychosis, which is masked by the symptoms of drunkenness.

Third: Patients suffering from mental diseases who are restless and excited show great tolerance to sedatives, therefore larger doses should be given at the start. Frequently a patient is given an ordinary dose, which fails to quiet him, and the dose is then often repeated at short intervals. As a result of the cumulative effect of the sedative, we frequently have patients brought to the hospital in a state of toxæmia, in addition to their psychosis.

Fourth: There is greater danger of suicide in mildly depressed patients than in the severer types. It is true that, in the profoundly depressed, although the suicidal impulsions are stronger, yet, owing to their inhibition, they do not have the initiative to carry out their impulsions as readily as the mildly depressed patients, in whom the inhibition is not so marked. Patients who have attempted suicide prior to their admission to the hospital, we find, have been mostly of the mildly depressed types. Many of them had not been deemed dangerous, and had been regarded as suffering from neurasthenia.

Fifth: Patients admitted to the psychopathic wards are not by any means all sent to State hospitals, as is popularly supposed. As I have before stated, one third of our annual admissions, over 1,000 patients, are discharged after being treated from three to five days.

Sixth: Lastly, an idea is prevalent among the laity, and, to our surprise, often among physicians as well, that once a patient comes to the psychopathic wards, there is great difficulty in securing his release. It seems almost unnecessary to state that we have no desire to keep patients, as the number is already far beyond our capacity; on the contrary, we do our utmost to avoid their commitment, and discharge them to the custody of their friends, if it can be done without any material harm to the patient or danger to the community; and I am sure that the State hospitals likewise assume the same attitude.

Misunderstandings of this character, no doubt, arise from the ignorance and prejudice on the part of the public. During the last two decades, the treatment and conditions in the institutions for the insane have made tremendous strides, so that now patients suffering from mental disorders are sure to receive most humane, intelligent, and scientific treatment.

I feel that the next great step in bettering the condition of the insane must come from the family physician, for he is the only one who can enlighten the public and eradicate the inborn prejudice against these institutions, so that the mentally sick will be brought to the hospitals before it is too late.

We are always pleased to receive visits from medical men, so that they may see the conditions as they really exist, and I assure you that you will always be welcome at the psychopathic wards of Bellevue Hospital.

THE EVOLUTION OF HYGIENE AND SANITATION.*

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We have grown rather accustomed to think that the only period of medicine and surgery that really counted in the history of the development of these applied sciences is our own. Researches in history, however, have proved rather disillusioning for this self complacency. The last twenty-five years have seen some serious investigation into the history of medicine which has shown us how much some of the things which we think most modern were anticipated in the long ago. In spite of all our scientific studies, our favorite drugs come to us mostly from the olden time. Hydrotherapy, psychotherapy, even forms of electrotherapy are much older as a rule than we think them. Surgery, we have been quite sure, was modern, but the more we know about the past the less assurance have we in this matter. Some pictures discovered on a tomb in Memphis tell us something about the surgery of twenty-five hundred years before Christ and operations for what are probably carbuncle on the back of the neck and on the extremities show us, that while the Ebers Papyrus made it clear how old medicine was, just as great an antiquity must be claimed for surgery.

The history of mediæval medicine has in recent years received particular attention from German and French authorities, and nothing has been more

*Paper contributed to the Section in Hygiene and Sanitation of the Pan American Medical Congress held at Buenos Ayres.

jarring for our self sufficiency than some of their discoveries. Anæsthesia is not new, but a number of agents, among them an inhalant, were used for it in the thirteenth, fourteenth, and fifteenth centuries. All the operations or at least operations on all the important parts of the body were in vogue at that time. Guy de Chauliac, writing his textbook of surgery about the middle of the fourteenth century, describes operations on the head, on the thorax, and on the abdomen. He says that when there are wounds of the intestine these must be sewed up or the patient will die. He advised operations for hernia, but thought that more patients were operated upon for this affection for the good of their doctor's pocket than for their own benefit. At this time they operated for hernia in an exaggerated Trendelenburg position, the patient, head down, fastened to a board, leaned against the wall. With this it is not surprising that a great surgeon should have discussed cleanliness as one way of securing union by first intention.

In recent years then I have been wondering whether what has thus seemed to be true with regard to medicine and surgery may not also in some reason at least hold also for hygiene and sanitation. We are of course very prone to think that these are new ideas in the history of the world. A few years ago, however, we were quite as sure that certain advances in medicine and surgery which we now know to be old were modern inventions. It has seemed then, that it might be worth while to gather together the hints that we find scattered here and there through medical history and through non-medical literature with regard to the prevention of disease and the securing of such cleanliness as would inhibit microbical growth or at least prevent contagion and thus hamper the spread of disease. The subject has proved to be much more interesting and to contain much more material for its elaboration than I originally thought. It is presented to the congress because most of what one finds originates among the Latin nations and a large and important portion of it among the Spanish peoples.

The more one knows about the habits of the animals that are evidently arranged and adapted to prevent the spread of disease among them, the less is one likely to think that men entirely neglected these precious developments of habit and custom in the past. The animals of course derived their customs from what we are pleased to call instincts but these represent applications of Nature's laws, and it would be quite impossible to think that man had not in some way reached conclusions represented by practical applications resembling these. The chapter of hygiene and sanitation among the animals or at least among such of the animal kingdom as live in communities and therefore require sanitary regulations if health is to be preserved, has not so far as I know been written. Many hints for it, however, are to be found in the natural histories as we have them that give some data for this important subject. I have ventured to gather some of them together here. They form a natural introduction to the story of some of the old time beginnings of hygiene and sanitation.

One of the most interesting instincts among the animals, especially those that live closely associated together, is that of hygiene or sanitation as regards the disposal of their excreta. There are a good many animals that have instincts which dispose them to go aside quite as much as man does for the deposition of excreta. A certain number of them have curious instinctive actions that tend to conceal or cover up their excrement. Most animals, however, live in the open and there is no necessity for their having instincts in this matter since Nature cares for the disposition of excrementitious deposits without danger to health. Just as soon, however, as one studies animals living together in crowds then certain hygienic instincts are manifested very strikingly. When a chimney is crowded with swallows it has been pointed out that there is to the observer looking up from below a constant fluttering out of some of the crowd of birds, and that the surprise is that they should not be more settled and restful. Careful investigation shows, however, the fluttering out of the birds to the middle of the chimney so often seen is really in order that excreta may not lodge on those below them but may be carried down the main shaft of the chimney.

Among the social insects the instincts of hygiene and sanitation are strongly developed. Observers have told stories of bees and ants in this matter that are quite startling because they would seem to indicate a distinct use of reason. Bees always go out of the hive for the deposition of excreta and special arrangements have sometimes been noted for the prevention of soiling of the contents of the hives when the insects are suffering from certain dysenteric diseases that occasionally occur among them. It is well known that if any other insect gets into the hive it is killed and then if its body cannot be removed it is surrounded with a thick coating of wax that keeps it from becoming an annoyance. If a mouse finds its way into a hive it is stung to death and then all the softer portions of its tissues are gradually carried out leaving only the bones to be incased in wax, so as to prevent the contamination of the contents of the hives and apparently the danger to themselves that the bees know by instinct from the presence of decomposing material.

Bees remove their dead companions in the same way and there are other insects that seem to have some of these same precious instincts. Under these circumstances it would seem rather surprising that hygiene and sanitation should be sciences of comparatively recent development in man. It is only in their formal form, however, that they are so recent. From the earliest times the necessity for hygienic precautions and sanitary regulations have been recognized. The books of the Old Testament are full of such sanitary regulations and prescriptions of meticulous nicety meant for the preservation of health. Moses's regulations in this matter still seem eminently judicious and detailed beyond anything that we could think possible from the knowledge of his time. If in spite of this it should still seem that the animals are ahead of man in this respect, the surprise will be lessened by recalling that in many other departments of applied knowledge the animals are also far ahead of us. The spider constructed its air ship and made its suspension bridges and did its weaving long before man made his inventions in these lines. The wasp

was a paper maker out of wood pulp thousands of years before man thought of it. The arts and crafts of the animal world developed long before those of man and reached a perfection that we have only been able to appreciate as a consequence of discoveries and inventions in recent years.

I think, however, at the present time we are prone not to give men credit enough for what they did for hygiene and sanitation in the olden time. Our details of knowledge of their doings have been so scanty because history has been mainly occupied with kings and wars and politics and diplomacy that the life of the people has been hidden from us. I pointed out, for instance, in the *Journal of the American Medical Association* for February 1, 1908, that the earliest modern law for the regulation of the practice of medicine issued about 1240 also contained paragraphs for the regulation of drug making so as to insure pure drugs. Druggists who kept impure drugs were punished by the confiscation of their goods. Government inspectors were supposed to oversee the manufacture of drugs and if they neglected their duty in this matter the punishment was death. This same law forbade any one to lecture on medicine until permission had been granted after an examination, and physicians were required to spend three preliminary years in preparatory study and then four years in the study of medicine and a year of practice with a physician before they were allowed to practise medicine.

It would be indeed surprising to find that in a country where such a law as that just mentioned was promulgated there were no sanitary regulations of other kinds and no care for general health. Here once more I think that our forefathers of the long ago are likely to be blamed and misunderstood because we do not know enough about them. In an article published in *Ophthalmology* for January, 1909,[1] I called attention to the life of Pope John XXI, who had been a physician before he became pope. His specialty was ophthalmology. He seems, however, to have paid considerable attention to hygiene for we have an account of his having been made the archiater of Sienna when he went there to become a professor in the university, and at this time the duties of this office seemed to have included those of health officer of the city. Later when he went to Rome as papal physician before his own election to the papacy he became the archiater of the papal capital and seems to have exerted considerable influence over the health of the city. He is known in history as Peter of Spain and took the name of John XXI when he was made pope. (See *Janus*, 1898.)

There seems every reason to think then that if we knew enough about the details of medical history we should find that there had been considerable attention paid to hygiene and municipal sanitation by the Latin nations during and after the Middle Ages. In going through the hill towns in Umbria, Assisi, Perugia, and some of the others, I was struck by the fact that situated as they were on the top of a hill, as a rule, their situation was eminently well calculated to simplify their sewage disposal problem. There were no such things as sewers of course, their streets were narrow and roughly but well paved. Down these from the heights of the city there must have poured during the rainy seasons of the year and indeed on every rainfall of any quantity a torrent of water that swept all offending material out of the way. Of course their location on the hilltops were selected not for sanitary reasons but entirely for purposes of defense. I have often wondered, however, whether the protection afforded against disease as well as marauding enemies was not an additional reason for the situation of these towns in their rather inaccessible locations.

One of the triumphs of the sanitation of the Middle Ages was the eradication of leprosy. The disease had been brought back from the East by the Crusaders or at least had been reawakened by virulent infection at this time, and had spread all over Europe. It is very probable that many skin diseases were confounded with it, but there seems to be no doubt at all that genuine lepra was very common and that in the course of time it was practically entirely wiped out. Probably leprosy was almost as common as tuberculosis is now, yet the Middle Ages succeeded in meeting the problem and solving it. They went about it more crudely than we can do. They segregated those suffering from the disease absolutely until it gradually disappeared. That is practically what we shall have to do with regard to tuberculosis. They compelled the lepers to live in houses by themselves outside the towns, and, while we shall not have to do that, we shall have to see that the tuberculous cases as foci for the dissemination of the disease shall be so managed as not to be a source of danger. How universal our precautions will have to be the regulations of the Middle Ages with regard to leprosy will help us to understand. The interesting thing is that a precious lesson in sanitation may be learned from generations that we have been rather accustomed to condemn for their neglect of hygiene and sanitation.

The old time hospitals are the best possible evidence of how thoroughly some of the older generations solved the problems of hygiene as they saw them. Virchow's studies of hospitals in Europe during the thirteenth, fourteenth, and fifteenth centuries in his *Gesammelte Abhandlungen aus dem Gebiete der öffentlichen Medicin und der Seuchenlehre*[2] show how fine the hospital movement was and how many hospitals there were. In his opinion every town in Europe having more than 5,000 inhabitants had its hospital. Most of these hospitals were founded on the model of the old Santo Spirito Hospital in the Borgo at Rome which was erected by Pope Innocent III and managed by Guy of Montpelier, whom the Pope had summoned to Rome for that purpose. Every bishop was required to build and equip a hospital as near like the Santo Spirito as possible in his diocese. Virchow has some fine words of praise which I have quoted in my book on *The Popes and Science*,[3] for this pope of the early thirteenth century who took so much to heart the duty of providing proper quarters for the ailing in all the cities throughout Christendom.

It might readily be thought that these hospitals

[1] Reprinted in *Catholic Churchmen in Science*, Second Series, The Dolphin Press, Philadelphia, 1909.

[2] Rudolf Virchow. August Hirschwald, Berlin, 1879.

[3] Fordham University Press, New York, 1908.

must have been very insanitary and utterly unsuited to the purpose of proving proper quarters for the sick. Any such impression, however, is entirely false. The old Santo Spirito Hospital was a handsome spacious building. Some of the hospitals erected in the thirteenth and fourteenth centuries still remain and demonstrate how well the sanitary problems of hospital erection were solved. Mr. Dillon, a New York architect, describing the hospital at Tonerre in France, built by Marguerite of Bourgogne, the sister of King Louis IX, in 1293, says: "It was an admirable hospital in every way, and it is doubtful if we to-day surpass it. It was isolated, the ward was separated from the other buildings, it had the advantage we so often lose of being but one story high, and more space was given to each patient than we can now afford. It was, moreover, in great contrast to the cheerless white wards of to-day. The vaulted ceiling was very beautiful, the woodwork was richly carved, and the great windows over the altars were filled with colored glass. Altogether, it was one of the best examples of the best period of Gothic architecture."

There are other hospitals of the olden time at Sienna, in Florence, and above all the grand hospital in Milan, though that was erected in the fifteenth century, which show us how magnificently these generations understood the hygiene and sanitation of hospitals. It is no wonder then that we find the Spanish Americans the direct inheritors of these traditions among the Latin races erecting fine hospitals in America. I called attention in the *Medical Record* for October 2, 1904, to the fact that the first hospital erected in America, a beautiful structure still in existence, was built and endowed by Cortez in the city of Mexico in 1524. Throughout other Spanish American cities beautiful hospitals were also erected long before we of English America began to take the sanitary and hygienic problems of hospital construction seriously. Many of the old monasteries built in the Spanish American style, that form of architecture invented in Spanish America, contained finely equipped, well ventilated, thoroughly sanitary infirmaries in which not infrequently those from outside who were ailing were received and treated as well as the ailing among the brethren.

In the light of what was accomplished in the building of really fine hygienic hospitals on good sanitary principles and so many of them in the thirteenth, fourteenth, fifteenth, and sixteenth centuries it is a source of never ending surprise to note what awful hospitals they began to build in the seventeenth century and how low hospital construction and arrangement and management sank in the eighteenth century. We are prone to think that men advance by definite degrees and that each succeeding generation takes advantage of what preceding generations have done and goes a little ahead of him. The story of hospital organization, however, is a definite contradiction of this. The worst hospitals ever built in the world's history came at the end of the eighteenth century. It is because we have so much better hospitals than they did and because we are prone to think that they must have been ahead of their predecessors that we are so likely to conclude that the hospital organization and hygienic regulations generally must have been awful in the medieval times. What we need in order to make our realization of history true is more study of the actual facts and less deduction from ignorance of reality.

Jacobsohn, in his History of The Care of Patients[4] and Miss Nutling and Miss Dock in their *History of Nursing* called particular attention to the decadence of hospital organization and hospital construction in the seventeenth and eighteenth century. They also point out, however, that this decadence affected the Latin races of Europe and of our own country, much less than it did the Teutonic races. Some of the hospitals in Italy and Spain even in these awful centuries were not so bad. Here in America the story of French nursing and of Spanish hospital organization shows much more effort and intelligence than anything that was being done in the English America. Until well after the middle of the nineteenth century our hospitals in the United States were about as bad as they could possibly be. Bellevue as a typical example and Blockley as another instance were homes for ailing people than which worse could scarcely be imagined. It was no wonder that the poor were afraid of hospitals. One needs but read Sam Warren's description of incidents in his experience as a medical student to realize that the same thing was true in England. Women had been taken out of the administration of hospitals and nurses were of the character of Sairy Gamp, and it is a wonder the conditions were not worse. The history of these times is a serious warning for the future and a precious lesson in how decadence may come after progress has been made.

At most hygiene and sanitation could be but vague, however, until the discovery of the microbical cause of disease. The very first observer, however, who dwelt on the possibility and seems surely to have even seen some of the manifestations of microbes was also the first to point out very clearly the scope of sanitary regulation in the prevention of disease. This was the famous Father Kircher, the Jesuit to whom we owe our textbooks that were popular for a century after his time in many schools in Europe in nearly all the scientific subjects. Father Kircher insisted that disease was due to little living corpuscles and that living agencies of various kinds were much more important in carrying diseases than the air and inanimate objects, though these had been blamed much. For instance, he pointed out very distinctly the rôle that flies and mosquitoes play in carrying disease from one person to another and suggested that pet dogs and cats were also carriers. He told the story of the pest in his time, and it contains many wise observations on disease dissemination. He was sure that the pest had found its way into a convent closed to the outer world through a cat which was permitted to visit the nuns.

Some curious old fashioned ideas as to the rôle of animals in the distribution of contagious disease occasionally had indeliberate favorable consequences. There are some classic allusions to the destruction of rats in times of epidemic and of the existence of more than a suspicion that they had some-

[4] *Geschichte des Kranken-Comfort.*

thing to do with the dissemination of epidemic diseases and especially plague.

Kipling had a story in the October *Delineator*, 1909, in which he told very vividly of the physician who, believing in astrology, concludes in time of plague that the moon is the fatal influence, and while thinking sadly of this in the moonlight notices rats stealing here and there. He remembers that they are creatures of the moon and he organizes a crusade against them which leads to their eradication from the village and the complete cessation of the epidemic, the cleaning up necessary to get at the rats helping greatly in this result.

A very interesting development of hygiene and sanitation in the Latin countries that long anticipated the modern crusade against tuberculosis was the series of government regulations which in Naples in the Papal States made tuberculosis a reportable disease and required that clothing which had been in contact with a dead tuberculous patient should be burned and the rooms in which he lived be disinfected. Even carriages in which tuberculosis patients had taken the air became difficult to sell, as de Chateaubriand found, because they felt that they would have to be reupholstered to be absolutely safe. Long before these laws Morgagni had refused to make autopsies on tuberculous patients, because he felt that the disease was contagious. At this time the French and the northern nations who were brought into rude relations with these progressive but extremely bothersome laws thought them barbarous. They were perfectly persuaded that tuberculosis was an hereditary disease. In Spain, however, the attitude was like that in Italy. The two peninsulas were in much closer relation with one another than with the intervening mainland in scientific matters. George Sand tells an experience when she was traveling with Chopin which shows that the Spaniards evidently considered tuberculosis contagious.

With all this anticipation of many modern ideas in hygiene and sanitation among the Latin nations it is not surprising that with the development of medical schools in connection with the Spanish American universities these branches should have been given much more attention than were given to them in English America. The prevention of disease had little place in the curriculum of our medical schools in the United States until the last quarter of the nineteenth century. Before that the medical schools of the South American countries had devoted no little attention to these subjects and had done much in the investigation of the possible prophylaxis especially of the tropical diseases. It was they after all who pointed out the value of quinine not only as a curative agent for malaria, but also as a prophylactic. While the discovery of the connection of mosquito with malaria and the practical application of this discovery to yellow fever were made by other than the Spanish Americans we must not forget that the suggestion for this work undoubtedly came from Dr. Carlos Finlay and that he had worked out the connection between the mosquito and yellow fever and that very thoroughly, though he had not the opportunity to apply his ideas practically.

Loewenthal, in his *L'Enseignment actuel de l'Hygiène* (1887), shows how little was being done even at that time in the teaching of hygiene in most European universities and emphasizes how much improvement there had been in this regard in comparatively recent years at that time. His acccount of the teaching in Spain in hygiene makes it clear that the Spanish universities took the subject seriously sooner than most universities and especially before the English universities, and devoted much more attention to it. In spite of the separation from the mother country the Spanish American countries were likely to follow her lead in educational traditions of this kind, and so it is not surprising to find that the South American medical schools took up the subject before ours in English America turned to it. After all, with our brief courses in the United States—two years for most of the nineteenth century constituting the medical course—we had no time for anything but the very practical subjects, and hygiene and preventive medicine came quite late into our curricula.

While I have spoken of Spanish American medicine mainly, and the attention to hygiene in the universities of the Spanish American countries, I should not want to be thought of as excluding Brazil or Portuguese American medicine by that term. We in the United States are prone to think of South America as Spanish America and yet we know very well how much was accomplished for the development of medical education in Brazil. I have before me as I write Dr. Moreira's sketch of the Evolution of Medicine in Brazil,[5] which was read before the Fourth Medical Congress of Latin America at Rio Janeiro in 1909. In that one finds that with the creation of a medical school at Rio in 1812 the course was made to consist of five years. In the third year there was an introduction to hygiene, and according to a decree issued in 1813 a special department in hygiene was created. When in 1832 the course in medicine was lengthened to six years, legal medicine, hygiene, and the history of medicine were the important subjects of the sixth year. With the introduction of bacteriology this was given its proper place in this department. This practically represents the history of the teaching of hygiene in all the Spanish American countries. Not only they did not lag behind, but they were a little in advance of the rest of the world.

The improvement of the world's sanitary conditions in the future depends to a great extent on the people living in the tropics. As the Spanish American races inhabit these more generally than any others, it is on them that much of our future improvement in hygiene must depend. It is interesting then to find that in the past, when political conditions allowed, even at times when these were discouraging enough, these peoples have done excellent work especially in teaching and development. This is a warrant that the future shall be well done, so that during a congress like this, while chronicling what is being accomplished in the present, we look sympathetically at the past confident that the future is going to bring us marvelous developments, and yet not without a feeling of gratitude for those who, without the definite knowledge that we have ac-

[5] *Esboco, sobre a evolucao da medicina in Brasil* par Juliano Moreira, Rio Janeiro, 1909.

quired in recent years, worked faithfully up to their information and prepared the way for the evolution in hygiene and sanitation that has come in our time.

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TWILIGHT TALKS BY THE DOCTOR.

I.

By George F. Butler, A. M., M. D.,
Chicago.

There is a household to which I am admitted frequently as "the family physician." There are only three in the family, but the least one of all is a bald headed tyrant of the Robespierrean type. His faintest blink is law, and the doubling of his tiny fist causes the heart of the boldest to quake. He is not two years old, but the supremacy of antique dynasties is heavy upon him. If he sleeps, the household, including the guest within the gates, suspend the breath and hush the footfall. If he wakes there is nothing permitted to interfere with his wishes. Cares he to play horse? The father bends his patient back and canters to and fro like a steed of the desert. Does he sneeze? Every window is shut and adult cumberers of the earth long for death. At the table, perhaps, he evinces a sudden desire to walk upon the viands. He plants one foot in the salad and with a dimpled hand toys with the mashed potato. He is removed from his playground by force, only through fear that the excitement will make him ill, not out of regard for the sensibilities of the over fastidious guest.

The children of whom this babe is a blooming type always have a tendency to overdevelopment of brain, and for that reason need to be humored and delicately handled. God knows, there is not sufficient brain development in the human race at the best to discourage it in such a manner as this. Rather an abnormal brain than the torture of the home experience of a baby ridden family. Children are dear and sweet in their way, but they should not be allowed to run things with too free a hand. Gray headed men and women, even fathers and mothers to say nothing of superfluous and silly guests have a few rights, along with the African and the alien, which a two year old child should be taught to recognize and respect.

There are many parents such as I have just described. And there are many children such as the Robespierrean infant who will grow up into physical, nervous, and moral wrecks, if conditions are not radically changed.

Theories of heredity have done much to mislead us in our understanding of the child. The conception that infancy was the epitome of manhood rather than a mere aggregation of potentialities, has proved for centuries the stumbling stone of both the laity and the medical profession. Our hygiene for and treatment of the little ones have been absurd enough to warrant the suspicion that it was founded upon the principles set forth by Tristam Shandy in his proposed extension of the application of the Papal bill concerning prenatal baptism.

There must not be so much emotional attention to infants.

Such constant attention as my friends are giving their first born is very likely to do the child irreparable harm. Almost any baby in three months can be made an autocrat; and many children, before the end of their first year, have true nervous prostration from too much attention.

Children should entertain themselves and be entertained by others less. This will develop their minds, and rest their emotions. We must observe them and talk about them in their presence less. Otherwise we are sure to provoke a series of most vicious emotions, that grow into habits that influence them in a bad direction in after life.

I can not imagine why parents humor their children so much. Parents who perpetually have entertained, coddled, and diverted their children, who have jumped at their call as to the command of a superior being, cannot by logic and nature object to coffee, cigarettes, wine, or late hours, when they pass into youth, and still would gratify their desires for all sorts of stimulating amusements. None of these sins against Nature is so great as those which earlier have been fostered and encouraged. Indeed, had their earlier sins never been committed, many of these later indulgences would not be sought. The exaltation due to the earlier mistakes cannot be ignored in later life.

If the emotional propensities of the children had received as much tranquil rest as their muscles h[illegible] their brains would have grown up with more normal demands, and with better resisting powers.

If mothers who humor their children to the point of the unbearable would stop to consider that in so doing they do not create so much pleasure for the little ones as they awaken disgust in contact with the darlings, perhaps they would pursue a different course. There are very few parents who would not wish the highest good for those confined to their care. To know that the children who are exceedingly dear to them were referred to by outsiders generally as "little imps" and "holy terrors" might prove a barrier in the way of over indulgence. If Nature had intended the baby to be paramount she would have installed the baby first and presented it with parents as an after thought. The home that is ruled by unwisdom and immaturity must ever find its type in the stables (if such stables were possible), where the trainers are subservient to the colt, and the jockeys are put to their paces at the caprice of the entering of the two year olds of the Derby.

We ought to stop making young ladies and gentlemen out of children. To push them into responsible social life as early as many parents do is to develop emotions and cares, and subject them to tests and temptations that ought to be postponed for years. And the only justification we have for it is our and their unwholesome pleasure in it all, and their hoped for salvation from diffidence later. The truth is, that the diffidence is an advantage, and ought to be encouraged rather than otherwise.

The strife for supremacy in school, the fear of failure, the envy and jealousy of others, constitute among the most wearing tendencies on the brains of children.

More important still is toughness of psychic fibre. The child who can endure disappointment,

who can be "crossed" without a tantrum, and who habitually obeys, is building a bulwark against "nerves," and the one who is not frightened easily, and has self control and a budding courage, has nipped many serious illnesses in the bud.

Children should be educated to expect more or less sorrow, that is, they should be ready for anything life has in store for them and be prepared to meet it bravely and to endure all things, only striving to sweeten and soften rather than to harden under the discipline of sorrow. Unselfishness is the most rare and at the same time the most Christian virtue possible for the attainment of human nature; but did anybody ever yet grow unselfish through a life of indolent self indulgence and ease? Did fruit ever amount to anything that was left unacquainted with the sharp discipline of the gardener's shears? I tell you, all the way up from an apple to a man, it takes lots of pruning and lopping off of superfluous branches to bring out the flavors and sweeten the fibre of the fruit.

Children should be taught to be fearless, fearless for themselves and for the future. That the young should have no fear of man or God, no thought for the morrow, is natural and proper. Dr. Patrick says it is natural and wholesome that the child should have no regard for his organs, no knowledge of hygienic rules, no conception of the significance of pain. When the parent makes the child a party of his apprehensions, confides his presence of ills, and communicates the ominous augury of bodily symptoms, he is rearing assiduously a little hypochondriac who will live to condemn the parent who made him a burden to himself, and a curse to others. Fear of the dark, of thunder and lightning, of animals, burglars, accidents, spirits, devils, and death is born of parental foolishness, and is always potentially the seed of later nervousness.

It is also very necessary to educate the child to be cheerful. Cheerfulness is one of the first essentials of the preparation for life. The first duty we owe a child is to teach it to fling out its inborn gladness and joy with the same freedom and abandon that the bobolink does when it makes the meadow joyous with its song. Suppression of the fun loving nature of a child means the suppression of its mental and moral faculties. Mothers who are cautioning their little ones constantly not to do this or not to do that; telling them not to laugh, or make a noise—until they lose their naturalness, and become little old men and women—do not realize the harm they are doing. Children without hilarity will never amount to much. Trees without blossoms will never bear fruit. How many lives are blank, dry, and as uninteresting as the desert, because cheerfulness was crushed out of the child life; because the joys of childhood never were developed! Their young lives were suppressed, and all that was sweet and juicy was crushed out of them in their early years.

Here I am wandering away into the hygiene of infancy and childhood—a hygiene not of the digestive system, of the eye, ear, nose, throat, skin, or respiratory apparatus, but more particularly of the brain and nervous system—a hygiene too often neglected, but the most important of all.

I started out to tell of certain sick spells our Robespierrean tyrant has had and how I managed the parents and treated the child, but "that's another story" and, as it is getting late, I'll postpone the telling of it until another evening.

THE TREATMENT OF EPILEPSY WITH HYPODERMIC INJECTIONS OF RATTLESNAKE VENOM (CROTALIN).

Preliminary Report.

By Ralph H. Spangler, A. B., M. D.,
Philadelphia.

In January, 1909, Dr. Thomas J. Mays called my attention to a case reported by Dr. L. E. Self, of Clairette, Texas.[1] The patient was a male, thirty-five years old, who had had "epileptic fits" for fifteen years. He was bitten by a snake two years previously and since then had been free from epileptic attacks.

I had several epileptic patients under my care and decided to give them an artificial bite with a hypodermic injection of the dried, glycerinized venom of the rattlesnake (*Crotalus horridus*). I had been using the venom at the Philadelphia Clinic for Chest and Throat Diseases in cases of tuberculosis since September, 1908.

It is my purpose to report in this brief preliminary paper the results of the empirical treatment in eleven cases of epilepsy during the past fourteen months, including the experiences of several colleagues, who, at my suggestion, have used the venom.

The cases are too few in number and the period of its use has been too limited to be of more value than to merely suggest the possibility of our having in this therapeutic agent a drug, which upon further clinical investigation and study, may be the means of modifying the convulsions in epileptic attacks, and possibly lessening their frequency, if not ultimately effecting a cure in many idiopathic cases.

No attempt has been made to study the physiological action of the venom further than to note that there appears to be no special action on the gastrointestinal tract, or on the renal or cardiac systems. For the study of its action on the respiratory tract I refer the reader to the article of Dr. Thomas J. Mays in the *Boston Medical and Surgical Journal*, April 15, 1909.

That the venom, when given hypodermically, makes a profound impression on the nervous system, I am convinced from my limited experience with its use in epilepsy. As to the modus operandi of its action further observation and study are necessary. It is in this field that I trust the report of the following cases may be the means of inciting further investigations as to its action and usefulness.

The solution used in the cases was made up as follows:

℞ Crotalus venom, ... gr. ss;
Glycerin, ... ♏ l;
Distilled water, ... ♏ cc.

Five minims of the solution contains 1/100 grain of the venom.

[1] *Medical World*, June 30, 1908.

Method of administration. The solution is drawn into the hypodermic syringe and injected under the skin of the site selected. It has been my practice to give the injection in the left arm of right handed patients, and to vary the point of introduction from the front to the back of the forearm, and occasionally above the elbow.

The local reaction varies in different individuals, but in all the cases in which I have given it the patient describes a burning or stinging sensation which begins from fifteen seconds to two minutes after the injection. In from five to ten minutes after the injection a hyperæmic area of about the size of a silver dollar is noted at the site of the injection. The "stinging sensation," as most patients describe it, continues, and in from two to six hours (varying in different individuals) the erythema and cellulitis has extended to a larger area. The forearm is swollen, red or reddish purple, and hot to the touch. In some cases the pain and burning becomes so intense that the patient insists on relief, and I have had an ice bag applied. In one case during my stay with the patient the ice in the bag was all melted in twenty minutes. I have found the best means of relief, for the localized pain, to be a saturated solution of magnesium sulphate. Ten or a dozen layers of gauze are laid over the affected part and if kept wet with the solution it is very grateful to the patient.

The swelling, cellulitis, and pain reaches its maximum in from twelve to twenty-four hours, and then gradually subsides. By the third or fourth day, as a rule, the local symptoms have almost entirely disappeared, and on the sixth or seventh day another injection is given usually at some little distance from the preceding one. As subsequent injections are given the local reaction becomes less marked, and the strength of the dose can be increased if indicated.

The dose. I usually start with 1/200 of a grain and gradually increase the strength. The largest dose I have given has been 1/12 of a grain. This was after the patient had received injections weekly for four months. I have, as a rule, not increased the dose as long as no convulsions occurred, or when the attacks became progressively less frequent. Each patient exhibits idiosyncrasy in one form or another, and the strength of the drug must be varied accordingly. Too large a dose in some individuals may, I believe, act as an irritant disturbing the normal balance of the nervous system and hasten an attack.

The following cases illustrate the effect of the venom on the frequency and character of the attacks:

Case I. A. R., female, age eleven years. Family history negative. During summer of 1908 chorea developed which was treated with Fowler's solution and bromides with but little improvement. September, 1908, she was seized in school with a mild attack of epilepsy. In ten days a second attack, more severe than the first, occurred while she was playing in front of her home. From October, 1908, to March, 1909, the attacks became progressively more severe and occurred at shorter intervals—two or three times her mother reported she went as long as three weeks without an attack—but as a rule she had had from two to five attacks weekly for six months previous to starting the crotalin treatment.

When I first saw her she had been excluded from school because of the frequency of the attacks; she could not sleep at night without "jerking and jumping upon the bed" as her mother described it. She had not had an attack for two days before I began treatment, but on this day she was unusually nervous—cried without cause, refused food, and told her mother she "felt a fit coming on."

Treatment. On March 12, 1909, about noon, I gave her a hypodermic injection of 1/200 of a grain of crotalin. The injection was given in the back of the left forearm, midway getween the wrist and the elbow. As this was the first case of epilepsy I had used the venom on I went to see her again that evening between eight and nine o'clock. She was sleeping naturally and quietly and her mother said she had gone to bed about seven o'clock. No convulsion had developed that afternoon and her mother thought she was not as nervous as in the morning, although she complained of the burning pain in left arm where the venom was injected. The forearm was considerably swollen, red, and hot to the touch.

On March 13th at noon (twenty-four hours after injection) I saw the patient again. There was a marked contrast to her nervous, apprehensive condition of the day before—she was holding her left arm with her right hand and said it was very sore—she felt better, relished her breakfast, and her mother said was only awake once during the night, and rested more quietly than she had done for a year. Three days after the first injection the swelling and redness had almost entirely subsided and the nervous symptoms were all much modified.

The second injection was given March 19th and the strength increased to 1/150 of a grain. For six subsequent weeks an injection of 1/150 grain was given each week and then they were stopped.

On April 5, 1909, she returned to school and her teacher told me she acted like another child. "She did not become nervous or excited and was doing her work nicely." Her mother at this time said she slept all night without awakening. The jerking and crying spells had disappeared, and she had had no more convulsions.

It is now fourteen months since the first injection was given and one year since the last was given and she has had no more attacks.

Case II. W. B., American, male, single, twenty-nine years of age. Family history negative, except that mother died of dropsy at forty-five years and one brother died of consumption. No epilepsy, insanity, or alcoholism in ancestors on either side.

Previous history.—Until fifteen years of age the patient had been well except for several mild diseases of childhood. At fifteen years while cutting wood in a cellar he was suddenly taken with a convulsion. He had had from two to five epileptic attacks a week, as a rule, ever since, except two years ago, when they were absent for about two months. Occasionally he had had ten or twelve attacks in one week.

His last attack before beginning crotalin treatment was June 12, 1909 (five days before the first injection), and on that day he had two convulsions, at one a. m. and six a. m.

The attack began at first with a twitching and gradual flexing of the fingers of left hand, and then he went into unconsciousness in from two to five minutes. As a rule the convulsions lasted from five to twelve or occasionally fifteen minutes, and he came out of them with a severe headache and went off into a sound sleep.

He had taken no treatment for three and one half years. Previously he was treated at two hospitals and numerous nervous dispensaries with occasionally temporary improvement.

Treatment. June 17, 1909, he was given an injection of 1/200 grain of crotalin with only a moderate local reaction resulting. The following week the dose was increased to 1/100 grain, and the third week to 1/50 grain which strength dose he has been getting every seven days up to the present time, with the exception of one month when he did not appear for treatment. The diagram (Case II) will show the number of attacks every week since starting crotalin treatment.

In fifty weeks during which time he had had crotalin treatment exclusively he had had nine mild attacks and one severe attack. He said the mild attacks had not left him with any headache and there was little tendency to somnolence. From September 16th to October 14th he

did not appear for treatment and it was twenty-four days after the injection of September 16th that he had the only severe attack he had suffered since the crotalin treatment was started.

It is interesting to note that the local reaction in this case has grown progressively less with each subsequent injection.

The patient had not been able to work for four years, and he has been at work every day now for eight months. He feels well and has regained confidence in his physical condition.

Case III. K. E.; female; married; age twenty-five years; weight, 200 lbs. Family history negative. No epilepsy, insanity, or alcoholism in ancestors.

Previous history. Patient had had the usual diseases of childhood. At ten years she had St. Vitus dance and was ill for four months. Menstruation was established at fourteen years. At seventeen epilepsy developed and she had nine attacks the first day. She continued to have two and three daily for the next year. At eighteen she was married. She then weighed 140 pounds. During her first year after marriage the attacks decreased in frequency, sometimes being four to six weeks apart. They began then to appear regularly at the menstrual period and often times three and four attacks in between. She had never been pregnant. The menses were scanty but regular. No specific history except a valvovaginal abscess.

She came to me for treatment in December, 1906, at which time she occasionally went a week without a convulsion, but more frequently had one a day and some times two or three in twenty-four hours. I dieted her and used baths and bromides. She improved, and for about eighteen months the attacks occurred only once in two or three months. Then they grew more frequent again and when I began crotalin treatment, March 27, 1909, she was averaging from three to five attacks per week.

I began with an injection of 1/100 grain, and in four weeks increased it to 1/50 grain, at which strength I have continued giving it at irregular intervals of from two to three weeks apart ever since.

The diagram (Case III) shows the frequency of the convulsions since starting the crotalin treatment.

The attack during week beginning June 26th occurred just before the menstrual period. The attack during week ending September 4th was independent of menstruation. The attack during week ending October 30th followed the extraction of two teeth. The attack during week ending February 19th occurred when patient had not had an injection for five weeks and she had had a family contention.

During the twelve months she had been getting the injection four attacks occurred.

There had been very little variation in the local reaction in this case, the injections always causing considerable swelling and redness which lasted three to four days.

Case IV. Max R., Russian, twelve years of age, school boy. Family history: Mother had epilepsy when a child, but no attacks after marriage; father had a brother who was epileptic; patient's eighteen year old sister was mentally unbalanced.

Previous personal history. Patient was subject to convulsions when an infant. No attack from infancy until after an attack of scarlet fever and nephritis at nine years of age—epileptic convulsions then started. At first they occurred once a month and increased in frequency until May, 1909, when he had two and three attacks every week. At this time crotalin injections were started

The attack. Premonitions of five minutes to half an hour preceded the onset. The convulsion was heralded by a scream, and he fell over in a typical convulsion, with frothing at mouth, muscular twitching, and jerking, which lasted from five to ten minutes and was followed by a profound sleep. When he awakened he suffered with a severe headache. I personally witnessed one of the attacks.

Treatment. On May 19, 1909, after an attack in school I gave him an injection of 1/100 grain of crotalin. The injections were continued weekly and increased to 1/50 grain by Dr. Samuel G. Shepherd, who observed the case since the beginning and to whom I am indebted for the tabulated report of Case IV.

For six months before beginning the crotalin injections patient was having two and three attacks per week. During the eleven months he received the crotalin treatment he had had only four attacks, all of which were preceded by a history of several days' constipation.

Case V. S. R., single, female, age twenty-two.

Family history, negative, except that one sister died nine months after marriage with epilepsy.

Previous history. Patient had the usual diseases of childhood. At sixteen years she began to menstruate and epileptic attacks came on two and three times a week. They had continued ever since, from one to five weekly, and during menstrual periods from three to ten daily.

She had been under almost constant treatment and was saturated with bromides when I began the crotalin injections, at the same time the bromides were stopped entirely.

She had attacks Mays 24 and 26, 1909, and May 28th I gave her an injection of 1/50 grain of crotalin. She was free from attacks until June 5th (six days) when during the night she had three attacks.

June 6th, injection of 1/50 grain was given.

June 14th (nine days after last attack) she had a convulsion lasting two minutes and that night her menstrual period came on. The period before (and before crotalin was started) she had six attacks in thirty hours, and the convulsions lasted from fifteen to thirty minutes.

June 17th she was given injection of 1/50 grain.

June 24th (ten days after last attack) she was given the fourth injection of 1/50 grain and she reported feeling much better and had no attack between the last two injections.

The local reaction in this case was more profound than in any case I have used it on and she did not return to my office. I called at her house July 11th and she reported having had two convulsions on July 4th, but on account of pain caused by the injection she refused further treatment and I have lost sight of the case.

Case VI. L. H. E., American; single; age, twenty-four years. Plumber's assistant.

Family history, as to epilepsy, insanity, and alcoholism, negative.

Previous personal history. At five weeks of age patient fell down stairs. Nothing noted as result of fall until he was seven years old when a convulsion developed, said to have lasted three hours. He had had almost daily attacks since and at times five or six attacks in twenty-four hours. The longest time they were ever absent was one week.

The attack. He had premonitions and could generally foretell an attack about five minutes before it came on. He fell into a sound sleep after an attack for three to four hours and woke up normally, having no headache or after effects. He was treated at various dispensaries and by private physicians.

Treatment. November 4, 1909, he was given 1/150 grain of crotalin hypodermically after having had five attacks in forty-eight hours.

November 5th, he had one attack; November 6th, he had three attacks; November 7th, he had no attack; November 8th, he had one attack; November 9th, he had one attack; November 10th, he had no attack; November 11th, he had no attack; and was given an injection of 1/50 grain of crotalin.

November 12th, he had a slight attack which lasted only one minute. He did not go to sleep afterward, but went right on working.

From November 13th to November 18th he had had no attacks and reported more ambition, and the constant feeling of worry, as though something was going to happen, had left him.

November 18th, he was given an injection of 1/50 grain and he did not report again until December 2d, when he had gone two weeks without an injection and had no attacks.

December 9th, he reported no attacks for preceding week and was given injection of 1/50 grain.

December 16th, he was given 1/50 grain and had not had an attack since November 12th (5 weeks). He then stopped treatment because he had no attacks and he "thought he was cured." I have since been unable to trace the case.

Case VII. J. L., Russian, thirteen years old, school boy.

Family history negative as to epilepsy, insanity, or alcoholism.

Previous personal history. At six years of age he had a severe attack of measles and an epileptic fit developed while the rash was out. For one year following he had

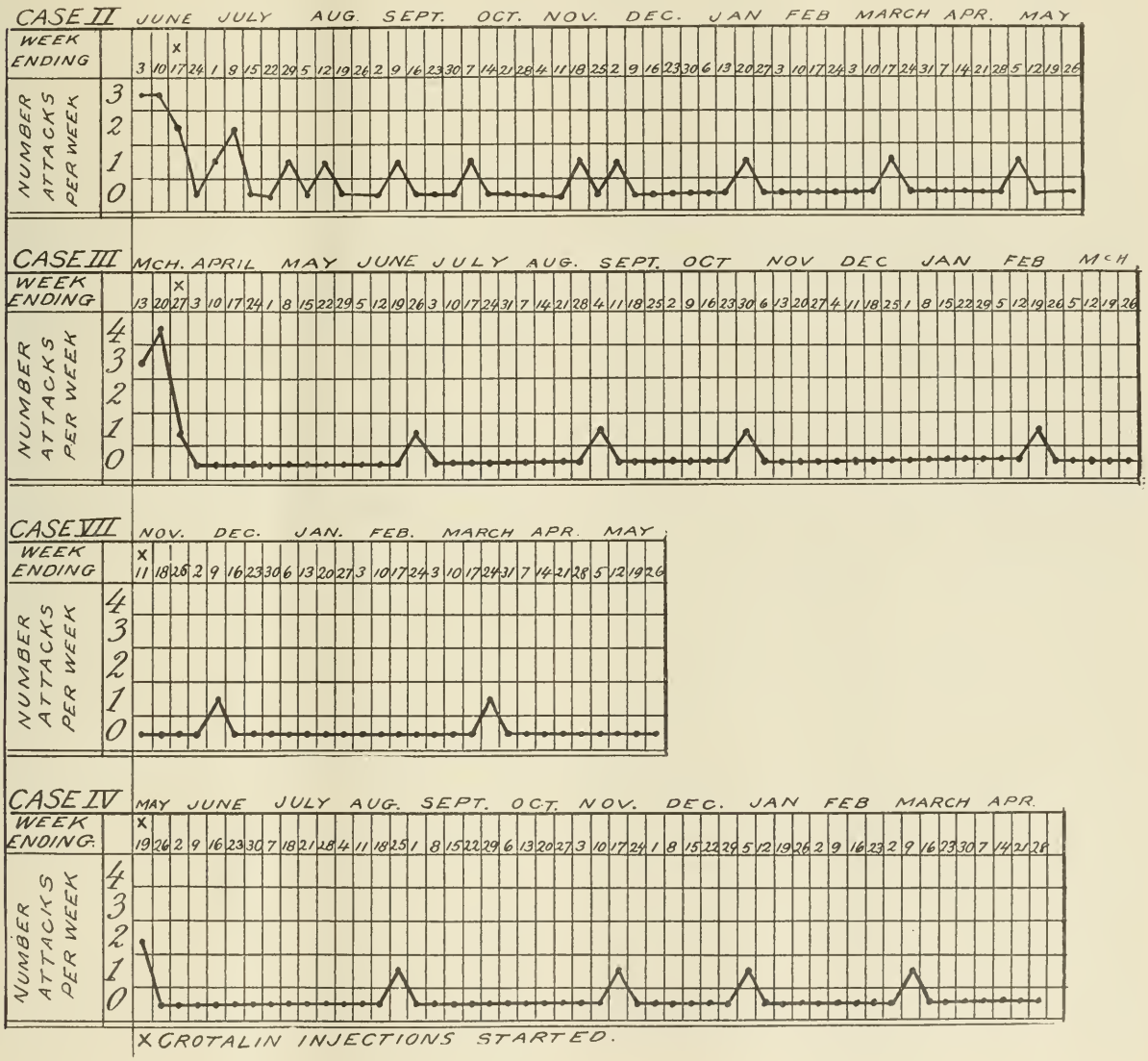
no other attacks. He then started to school and began having attacks on an average of one a month until the past year, when they became more frequent, and since August, 1909, averaged one attack a week.

The attack. For half an hour before the convulsion began he felt dizzy and objects became hazy. He then became rigid and the right eye, right side of face and mouth twitched. There was accelerated deglutition. The convulsion lasted from two to five minutes and he went into a profound sleep for from two to five hours. He arose with a severe headache, which usually lasted twenty-four hours.

Treatment. His last attack before starting crotalin was free from attacks until August, 1909, when he began to average three and four attacks a week, and occasionally had two and three in one day.

The attack. I was called to see him June 9, 1909. He was lying on the floor with fingers, hands, and arms flexed and rigid. His legs were relaxed. The attacks lasted about five minutes after I arrived. When he came out of the attack he was frothing at the mouth, had bitten his tongue, and screamed violently.

Treatment. On January 9th I gave him an injection of 1/200 grain of crotalin and prescribed ten grains of sodium bromide every three hours. He had had an attack each day for four successive days when I started the crotalin


CASE II
JUNE JULY AUG. SEPT. OCT. NOV. DEC. JAN FEB MARCH APR. MAY
WEEK ENDING
NUMBER ATTACKS PER WEEK
CASE III
MCH. APRIL MAY JUNE JULY AUG. SEPT. OCT NOV DEC JAN FEB MCH
CASE VII
NOV. DEC. JAN. FEB. MARCH APR. MAY
CASE IV
MAY JUNE JULY AUG. SEPT. OCT. NOV. DEC. JAN FEB MARCH APR.
X CROTALIN INJECTIONS STARTED.

on November 5th. I started the injections November 12, 1909, and have given him 1/100 of a grain every week since, in all twenty-nine injections in as many weeks, and he had had but two attacks, both of which were mild and he got over them without falling asleep or the usual resulting headache. See diagram.

Case VIII. R. B.; American; twelve years of age; school boy.

Family history. Parents were both alcoholic; paternal grandfather died of paralysis; no insanity or epilepsy in family.

Previous personal history. He never was sick until December, 1908, when he was carried home in a convulsion which lasted twenty minutes. At this time he was said to have been inhaling illuminating gas. He was then

injections. On January 13th I stopped the bromide and gave him an injection of 1/100 grain of crotalin. I repeated this strength dose on January 20th and 27th, during which time (three weeks), he had no attacks. The local reaction in this case was very marked and as the convulsions had stopped I could not induce the boy or his mother to continue the treatment. He went without attacks or injections until February 21st when he had three attacks in one day. Without consulting me the bromide prescription was renewed and continued off and on until March 26th. The attacks his mother thought were modified somewhat, but they grew more frequent and when I was consulted, March 26th, he had had four attacks that day. I started the crotalin again with an injection of 1/200 of a grain and increased the dose to 1/100 grain, at

which strength they have been continued. During the last eight weeks he has had three attacks.

Case IX. J. M.; Bohemian; thirty years old; married; blacksmith.

Family history negative as to epilepsy, insanity, and alcoholism.

Social history. Patient has always used considerable alcohol. Denied venereal disease.

Previous history. Patient was a healthy boy until sixteen years old when he was struck on head with an iron bar. Since then he had been subject to attacks of severe headache. Two years ago while at work he dropped his tools and had a "fit." This was repeated in two months, and since then the attacks had grown more frequent, and during December, 1909, and January, 1910, he averaged three a week.

The attacks he said come on without warning. He might be walking along the street smoking and his pipe would fall out of his mouth and he fall over. No definite description of an attack was obtainable, but they always leave him with a headache for several days. He had four attacks the week ending February 12, 1910.

Treatment. February 13, 1910, I gave him an injection of 1/100 gram of crotalin. These injections were repeated February 20th and 27th, March 6th, 13th, 20th, and 27th. There have been no more epileptic attacks up to date, but he had two severe attacks of headache.

Case X. Treated by Dr. M. M. Kent, of Trenton, N. J. R. K.; male, age twenty-five years; married; business man.

Family history, negative.

Previous personal history. He had the usual diseases of childhood. No history of a fall or injury. Apparently without cause epileptic attacks began when he was fifteen years of age. For the first two years they occurred only every six months, but then grew more frequent and averaged for a number of years two attacks a month. All of the usual remedies were tried, but despite treatment the attacks became more frequent.

Treatment. March, 1909, crotalin injections were started. The dose at first was 1/100 grain and gradually increased to 1/50 grain, which dose was continued since at one week intervals. Thirteen months had now passed since beginning the treatment and the patient had had but one slight attack. He is now able to attend to his business with comfort.

Case XI. Case treated by Dr. H. M. Righter, of Philadelphia. J. H.; age, 19 years; male; school boy.

Family history as to epilepsy, insanity, and alcoholism negative.

Previous personal history. At the age of fifteen years without any traceable cause he began to have "series of attacks" (six or eight attacks every day) of epilepsy. Then he would be free from attacks for a week and occasionally two weeks. The usual treatments were of no avail.

Treatment. June, 1909, crotalin injections were started with 1/200 grain and given every five days, increasing the dose 1/500 grain each time, until 1/25 grain was given at a dose. For the first three months after starting the treatment he had no attacks. Then he began to have very mild transitory attacks about every two weeks. He would not fall over or go off into a sleep after such an attack, but if he was carrying his books in the street he would drop them and walk along with a somewhat staggering gait. He had had no injections for three months and no severe attack or "series of attacks" occurred.

CONCLUSIONS.

1. The number of cases have been too few, and the time they have been under treatment and observation too limited to arrive at positive conclusions.

2. In each case, however, the attacks have been modified as to severity and the intervals between the attacks lengthened. In one patient, who had only been subject to convulsions for six months, there has been no recurrence since crotalin injections were begun.

3. The local reaction varies with individual susceptibility and as a rule the oftener the injections are given the less marked the local reaction.

4. There has been no depressing or deleterious effect noted on any of the vital functions of the system, but in all cases a feeling of well being is described.

5. The physiological action of the venom on the nervous system needs further study and investigation.

2034 South Thirteenth Street.

ICHTHYOL.

Usually a Soothing Agent, Sometimes a Severely Irritant One.

By Robert H. M. Dawbarn, M. D.,
New York.

Some little time ago the writer had an unpleasant experience with ichthyol, as follows: The patient needed a mercurial ointment for application over an orchitis; and in order to insure nonirritation of the locally thin, sensitive skin, I prescribed twenty-five per cent. ichthyol as a diluent. For the first time in nearly thirty years of practice this particular prescription went amiss; the ointment acted as a violent irritant and speedily had to be removed.

In discussing this incident with Dr. Louis Heitzmann, for twenty years dermatologist to the German Hospital in New York, Dr. Heitzmann commented upon the uncertain character of ichthyol, saying that whereas in almost all cases it acted for the purpose prescribed, he had known as weak a proportion as ten per cent. of it, in an ointment otherwise wholly bland, to blister within half an hour.

The writer thereupon asked Dr. Edward Preble to make a careful search of the Academy of Medicine library in order to discover a reason for this state of things. Dr. Preble reported that, although he had come, in the literature, across a very few cases recorded, of the irritant nature under discussion, no further explanation than "idiosyncrasy" had been advanced by way of accounting for the unfortunate facts. This is of course another way of simply saying, "I don't know."

There has, however, occurred to the writer an explanation which seems to him not fanciful, and he hopes that others will agree that it throws some light upon the darkness, in this matter.

Ichthyol, as we all know, is simply the fossilized remains of masses—often of many thousands—of fish, perhaps cast upon the land by some great tidal wave, or, as in the Tyrol, lifted high and dry from a sudden rising of the sea floor, and then buried, perhaps deeply, through falling into some coincident volcanic cleft in the earth—only to be exposed by mankind, as a sort of fish mine, untold thousands of years later.

Now let us consider a modern haul of fish captured by aid of his seine, at the hands of any fisherman. Perhaps ninety per cent. of the total catch are saved, as being wholesome and of good flavor. Perhaps a further eight per cent. are cast back into the sea, as being, although wholesome, yet of poor flavor, or otherwise not worth eating. And there remain two per cent., we will assume, neither good nor even safe eating; but instead, known to the ex-

perienced fisherman as being distinctly, sometimes even deadly, poisonous.

Now is it not exceedingly likely that what is true of a haul to-day, taken at random, was just as true of the mass cast upon the land so long ago, and destined to reach our pharmacopœia as ichthyol?

If so, whereas an immense preponderance of the whole will consist of fossilized nonpoisonous fish, there will remain a few, here and there, as unsafe as possible either for inward use originally or for local application now. And the writer can see no good reason to assume that such animal poison necessarily would die out into innocence. Indeed, it might quite as likely become even more virulent, with time. Even those ptomaines and toxines which are volatile do not escape readily from within the earth and disappear, as one might perhaps expect. As a striking, indeed, an almost unbelievable instance of this, were it not for the high professional standing—the authenticity—of its author, let me quote from Rodolfo Lanciani, professor in the University of Rome, his work upon *Ancient Rome in the Light of Recent Discoveries.* Under the heading Sanitary Conditions of Ancient Rome—pp. 66 and 67—he describes how by accident an architect digging for foundations for a dwelling in Rome came upon the remains of "not less than twenty-four thousand bodies" which had been cast into a pit during a time of pestilence with great mortality. (This is described by Livy, and occurred more than two thousand years ago.) Professor Lanciani was doing archæological research work right there at the time of this discovery, and he says: "On June 25, 1884, I was obliged to relieve my gang of workmen from time to time, because the smell from that polluted ground (turned up after a putrefaction of twenty centuries) was absolutely unbearable even for men so hardened to every kind of hardship as my excavators."

105 West Seventy-fourth Street.

A FEW FACTS CONCERNING THE CAUSES OF FAILURES IN ADENOIDECTOMIES.*

By J. Vernon White, M. D.,
Detroit.

The neoplasms or rather the hypertrophied glandular tissue of the nasopharynx has during the past few years been the cause of great discussion. This discussion has not been without its desired beneficial effect, for it has impressed upon the general public as well as the medical profession the important bearing this disease has on the local and constitutional well being of the patient.

Shortly after birth most children have more or less hypertrophy of these structures. During the first year, comparatively few suffer much inconvenience from their presence. Later in childhood, from the second year until the advent of puberty, symptoms develop in a much larger proportion. Authorities give this proportion as seventy per cent. It is this majority that demands our most urgent attention. To-day neglected cases are becoming a rarity. Public opinion has been educated and yet in spite of this education there are some who would wait until puberty with the plea that then they will disappear spontaneously. This does occur, but the instances are rare and then only possible when the growths are very small. The cessation of obstructive symptoms is not a guarantee of the disappearance of adenoid vegetations. Physical rather than histological causes may account for the lessened obstruction to breathing. The enlargement of the nasopharynx may allow a free space between adenoids and soft palate, the adenoids themselves remaining stationary or enlarging, and if allowed to go on neglected, about sixty-six per cent. of cases encroach upon the Eustachian tube in spite of the fact that nasal breathing is improving.

The ætiology of these growths is still a doubtful question. The well known pathological law, that lymphatic structures of children become enlarged or hypertrophied in response to bacterial stimulation, whereas the same stimulation in adults does not cause hypertrophy to a corresponding degree has been offered by many as proof that inflammatory conditions during the course of exanthematous diseases, irritation from dust, cold and damp climates, will and do act as causative factors. Then again many state that heredity plays an important rôle in the production of adenoids as they are often seen as a family characteristic. Possibly these characteristics are due more to similar environments and similar anatomical conformations than to true heredity. Yet, after all the reasons given are problematical and are not constant. Adenoid vegetations occur where irritation from dust, climatic conditions, and the exanthemata cannot be found as ætiological factors.

The symptoms of this disease are almost too well known to require mention. The expressionless countenance, the thick, short upper lip, the pale unhealthy appearance, enlarged cervical glands, mouth constantly or momentarily opened (mouth breathing), dry nose with a tendency to nose bleed, dry, harsh, barking cough, discharges of fœtid odor which will not yield to ordinary treatment, a nasal twang to the voice, snoring at night, deafness partial or complete with frequent attacks of otitis media, backwardness and bashfulness with stunted growth, inability to concentrate thought, stupidity even to the point of idiocy, enuresis, etc.; all or in part form a picture of adenoid disease which even the casual observer cannot fail to recognize. Here the diagnosis is easy and in fact often made by the parents themselves. They frequently bring their children not for examination or for this or that symptom, but having themselves diagnosticated the case they bring their children asking, "Doctor, what can you do for my child's adenoids?"

To be able to substantiate our promise of absolute cure, to show how to remove them completely and thoroughly, thus avoiding the oft encountered and discouraging continuation of symptoms after adenoidectomy is the object of this paper. For such thoroughness a correct knowledge of the relation adenoids have to normal anatomical structures of the nasopharynx is indispensable.

The nasopharynx is that part of the respiratory tract bounded in front by the posterior nares and be-

*Read before the Wayne County Medical Society in February and by request before the St. Clair County Medical Society in May.

hind by an imaginary plane continuous with the posterior border of the soft palate. The roof is formed by the basilar process of the occipital bone and part of the body of the sphenoid. The internal pterygoid plate of the sphenoid and a fibrous aponeurosis attached to the basilar process of the occipital and petrous portion of the temporal bones form the lateral walls. This space is lined by mucous membrane composed of cæliated columnar epithelial cells. Mucous glands and lymphoid tissue are found throughout. Across the upper part of the nasopharynx a greater amount of lymphoid tissue, than found elsewhere, is usually present. This is called Luschka's, or the pharyngeal, tonsil. The nasopharynx communicates anteriorly with the nares through the oval openings called the choanæ, with the ear through the Eustachian tube, and posteriorly it is continuous with the oropharynx. This space, namely the nasopharynx, is the only part of the pharynx which is normally patent. The walls of the oropharynx and laryngopharynx are on the contrary in apposition. The patency of this space, many authors assert, explains the frequency of adenoids in this location and the ease with which they here grow, resistance to their growth being entirely absent. This patency also is essential for the perfect performance of its physiological function. In speaking of the physiology of the upper respiratory tract Shurly says: "The chief function of the nasopharynx is undoubtedly that of an air chamber or resonance chamber contributing to voice production by furnishing air in an inclosed space for the amplification and modification of sound waves; and to audition by furnishing to the middle ear the necessary amount of warm, dry air, for the maintenance of the equipoise of the tympanum. Its shape and capacity furnishes a chamber for the retention of a certain quantity of air in a more or less passive state." Anything, therefore, which occludes this space or changes its shape and capacity interferes with the function of voice production.

The relative diameter of this space varies at different ages. Numerous measurements on the adult skull showed the average transverse diameter to be one and three sixteenths inches, the vertical diameter one and one eighth; cross sections at this age forming practically a square. In children these measurements are somewhat lessened but the vertical diameter is relatively shorter which fact explains how comparatively small vegetations cause such complete obstruction by impinging on the floor of soft palate. Besides this variation in shape there are several other differences in the construction of the nasopharynx which must be kept in mind while operating for adenoids. Disregard for these differences in construction is, I think, a common cause of failure to relieve our patients after adenoid operations.

The width of the space between the posterior border of the vomer and the internal pterygoid plate of the sphenoid is not constant. Consequently the degree of concavity on the body of the sphenoid with the pterygoid process varies. The wider the space the less will be the degree of concavity or the depression on the body of the sphenoid. Adenoids lodging in this space will, therefore, be easy or difficult of removal according as this depression will be deep and narrow or broad and shallow. In the digital examinations this peculiarity should always be noted, for on the complete removal of adenoids from this space often depends the success or failure of an operation. Another point of importance is the relation of the orifice of the Eustachian tube and fossa of Rosenmüller. The latter, situated in the lateral wall of the epipharynx about five eighths of an inch behind and a little above the posterior border of the inferior turbinate bone, is the landmark for passing a catheter into the Eustachian tube. This landmark in adenoid disease is often wanting, the fossa being completely filled in with vegetations. These vegetations, from their close proximity to the Eustachian orifice, obstruct the opening. Ear symptoms are due to the presence of growths in this fossa rather than to any around or in the tube itself. In the latter region they are never found. Failure of improvement of ear complications are not due to recurrences of the growths, as we so often hear but to incomplete cleaning of this adjacent space, this fossa of Rosenmüller. Growths that here remain continue their deleterious action on the tube. They prevent the proper performance of the function of the dilatator tubæ muscle and thus interfere with the free passage of air into the middle ear with each act of deglutition, an action quite essential for perfect audition.

Having determined the presence of adenoids there is but one course to follow. There is but one treatment worthy of the name and that is the complete surgical removal of the growths.

It is not the purpose of the paper to propose or elaborate on any one kind of operation. Suffice it to say that the Gottstein curette or one of its modifications is all that is necessary for any simple adenoidectomy. The point, however, I do wish to urge and insist upon is the thorough examination of the two regions explained before, namely, the grooves in the upper anterior part of nasopharynx on either side of the posterior border of the vomer and the fossa of Rosenmüller on its lateral walls.

Every case of adenoids will not present vegetations in these localities, but the operator should be positive of their absence or presence before dismissing the case as completed. If they are here found they are best removed with the finger. For this purpose such instruments as the Brandegee forceps or its modifications or the various shaped small ring curettes had better be discarded. With these instruments there is danger of too much bruising of tissue and of tearing off or otherwise injuring the Eustachian attachments of the salpingopharyngeus and dilator tubæ muscles thus partially or completely destroying their function of opening and closing the Eustachian tube, thereby causing a condition as bad or even worse than the one we are attempting to remedy. Besides, these small sharp instruments are often the cause of troublesome hæmorrhage.

I next wish to call attention to a disease which, I will admit, is rather rare, but which on account of its rarity is often overlooked and consequently is often the cause of endless trouble.

In long standing adenoid disease with an especially marked fœtid odor to the breath and in those

operated upon in which a marked discharge still persists, a condition known as Thornwald's disease should be suspected and looked for. Adenoids on the vault of the pharynx are often characterized by a central groove or sulcus. This sulcus forms a favorable spot in which secretions accumulate and on account of its depth are retained there. In time this sulcus is converted into a canal by adhesions of the growths on either side of the central line and if left to itself becomes lined by pyogenic membrane surrounded by a strong layer of fibrous tissue. This pathological condition first described by Thornwald still bears his name. It is recognized with the epipharyngeal mirror and through the anterior naris. In the former method the posterior orifice of the canal can be seen discharging a purulent secretion. In the latter a probe passed behind the end of the vomer will lodge in this canal.

If this condition is present the curette ordinarily used will not be sufficient to effect a cure. The tough fibrous membrane will not yield to any ordinary pressure that can be made with this instrument. It is necessary first to slit the canal longitudinally reaching it either through the anterior naris or through the pharynx and then curetting its base. In this way alone can the pyogenic membrane be destroyed completely.

CONCLUSIONS.

In reviewing the foregoing remarks the following points seem to fix themselves as worthy of more than ordinary attention; they should ever be present in our minds while operating for adenoids:

1. The peculiarities in shape of the space on either side of the rostrum of the sphenoid bone; 2. the location of the fossa of Rosenmüller and its relation to the orifice of the Eustachian tube; 3. the condition known as Thornwald's disease.

An adenoidectomy properly done must, therefore, remove vegetation from these localities or at least positively exclude their presence there. It must exclude Thornwald's disease or properly treat it if present. With these precautions results will become more satisfactory. Only then will the promises of complete cure so emphatically made before operation be corroborated by the local and constitutional improvement of the patients in every case. Failure heretofore so common will be a thing of the past.

57 Fort Street, West.

SOME PRACTICAL SUGGESTIONS FOR THE FACILITATING OF AN EARLIER DIAGNOSIS IN TUBERCULOSIS.*

By F. M. Pottenger, A. M., M. D., LL. D.,
Monrovia, Cal.,
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The advances which have been made in recent years in the treatment of tuberculosis place it among the most hopeful of all chronic diseases. In order to warrant this hopefulness, however, an early diagnosis and immediate intelligent treatment are necessary.

If there is any one factor to-day which is tending more than any other to defeat the cure of tuberculosis it is the failure to diagnosticate the disease early. This same failure, by allowing the disease to extend and reach the open stage before it is recognized, needlessly exposes countless numbers to the danger of infection and thus provides new victims for future sacrifices to this disease. Our progress will be seriously hampered until it is universally recognized early, instead of late, as it is to-day.

If early diagnosis of tuberculosis is to be the rule instead of the exception, the means of making it must be the common property of the medical profession and not be confined to consultants and specialists. Of the older methods of examination, percussion and auscultation have aided most in making a diagnosis, and, in the hands of specialists who are daily making careful examination of chests, these methods afford sufficient evidence when taken in conjunction with a careful anamnesis to warrant a positive or negative opinion in nearly all cases; but, for those who have not had special training in diagnosis, and those who do not have the opportunity for constant careful examination of chests, percussion and auscultation are unreliable and furnish little, if any, information that can be relied upon. This statement is not made in a pessimistic vein nor is it made to discourage physical examination, but rather to emphasize the necessity of more careful study and training in auscultation and percussion.

One suffering from incipient tuberculosis rarely falls into the hands of the specialist, primarily; but, if he consults a physician at all, he is most apt to consult a general practitioner or some friend who is a member of the profession; so, if the disease is to be diagnosticated early, the means for such diagnosis must be at the command of physicians in general.

It is probably just as important to the tuberculous patient that the physician who first sees him should suspect the presence of tuberculosis as it is that the diagnosis should finally be made, if not more so. I find so often that the early case of tuberculosis slips through the hands of one physician after another or is attended by a physician probably for months without his suspecting the presence of the disease. Superficial examination is the cause of this. Most physicians are not paid sufficiently for their work, consequently they do not give the time to examining the patient that is necessary for a diagnosis. It requires considerable time to obtain a history of a patient who is suffering from incipient tuberculosis; often more time than is given to the history taking, the physical examination, the giving of advice, and the writing of the prescription. If a careful clinical history of all patients who are suffering from the early symptoms of tuberculosis were taken, the disease would be suspected in almost all; for in nearly every instance there is a history of one or more of the following symptoms: Malaise, loss of strength and endurance, altered appetite, decline in weight, increasing nervousness, vague pains throughout the chest, especially aching between the shoulder blades, acute pleural pains, a slight tendency to cough or to become short of breath on exertion, repeated colds or the spitting of

*Read by invitation before the meeting of the American Institute of Homœopathy, Pasadena, Cal., July 11 to 15, 1910.

blood. If the physician were to systematically record the symptoms which he finds in these cases he would almost invariably have his attention directed to the chest. If, added to the symptoms, he should find a slight rise in temperature and a pulse easily affected by exertion, it would be his duty to rule out tuberculosis before any other diagnosis were made; so, I would say the first and most important point in the diagnosis of tuberculosis is to know when to suspect it.

Another fault which has crept into medical practice and which is interfering with the diagnosis of early tuberculosis is the tendency to treat symptoms without making a diagnosis. It is not sufficient to know that the patient is run down, we should want to know why he is run down; it is not sufficient that the patient should have pains in his chest, we must determine the source of those pains, not by a guess, but by a scientific examination. It is not sufficient that we should know that a patient is expectorating blood; the important thing is to know where the blood comes from, remembering in giving an opinion that in nearly every instance of this kind the cause is an underlying tuberculous lesion.

While we have the microscope and the tuberculin tests to help us in diagnosis, it must be remembered that they are only aids. The chief factors in accurate diagnosis must be clinical history and physical examination, nevertheless, the conscientious physician must bring to the aid of his patient, all measures which will assist him in diagnosticating the disease.

Well equipped laboratories are found in all cities and nearly all towns to-day, so there is little excuse for a failure of diagnosis of tuberculosis when bacilli have appeared in the sputum. But I find that the laboratory is not used as much as it should be in clearing up the diagnosis. We see patients who have been expectorating weeks, months, and sometimes even years, and presumably expectorating bacillus bearing sputum during this time, who tell us that they have been to physician after physician, without a diagnosis having been made and, to our dishonor, without the sputum having been examined.

To be sure, the patient is apt to minimize his symptoms. He is prone to say that he does not expectorate much; "only in the mornings" or "only when he has a cold" or "only from his catarrh."

Physicians must not let such statements deceive them. In suspicious cases, sputum, no matter how little in quantity or what the patient's opinion of its source, should be subjected to carefully repeated, if necessary, microscopical examination for tubercle bacilli. While I feel like strongly emphasizing the fact that we should not wait for the appearance of bacilli in the sputum in order to diagnosticate tuberculosis, yet I feel like emphasizing just as strongly the necessity of making routine microscopical examinations for tubercle bacilli of all mucus raised from the throats of patients who show any clinical symptoms which might suggest tuberculosis, or of all mucus which persists for any length of time. I am sure such a course would reveal a surprisingly large number of cases of open tuberculosis which go unrecognized to-day. It seems like a step backward to emphasize the microscopical examination of sputum for tubercle bacilli as a means of making an early diagnosis of tuberculosis, yet not all are able to make the diagnosis in the early stage by other methods at our command; and I am sure that the routine examination of sputum will be of great assistance to the profession and of untold benefit to the patients in advancing diagnosis beyond its present status.

I have found in these early cases that the examination of a twenty-four hour specimen of sputum is much better than that of a single expectoration. A patient might expectorate ten times a day, but only expectorate bacilli once, and if we examine a single sample instead of the entire quantity for twenty-four hours we run nine chances out of ten of failing to find the bacilli.

It is also a valuable aid to digest the sputum. This can be done by allowing it to stand in an incubator over night or by adding soda and pancreatin. I have employed this method often and have found it eminently satisfactory. If the bacilli are very few, examination may still further be facilitated by thoroughly mixing the specimen by shaking.

The tuberculin test is of great practical value in early diagnosis and is fast becoming popular now that we have been given the conjunctival, cutaneous, and intracutaneous methods, which appeal to the profession as being less dangerous than the hypodermic method. These various methods of applying the tuberculin test are simple, but they still require careful judgment in order to interpret them correctly.

A reaction from any of these tests gives the positive information that tuberculosis is present in the body. At this point the information ceases. It is then the work of the physician to determine where the lesion is located. A positive reaction to the tuberculin test in a patient who has symptoms on the part of the kidney, does not warrant a diagnosis of tuberculosis of the kidney, nor does a positive test in a patient with a suspected bone lesion or pulmonary lesion warrant a diagnosis of tuberculosis of the bone or lung. Such diagnoses have been made, but they are an abuse of the tuberculin tests, which, without focal reaction, give no evidence as to the location of the tuberculous lesion, but only show that a tuberculous lesion is present. If a recognizable focal reaction occurs, however, as it often does when we use the hypodermic method, then we have incontrovertible evidence of not only the presence but of the location of the disease. In the presence of suspicious symptoms pointing to tuberculosis of some organ and a positive tuberculin reaction (excluding focal reactions) a great responsibility confronts the practitioner, for it is his duty to determine the location of the lesion.

Clinicians have striven earnestly hoping to devise some method by which the diagnosis of incipient tuberculosis, especially as it affects the lung, might be made easy; while these various methods have added considerable to the sum total of our knowledge of diagnosis, yet most of them seem unpractical to the general practitioner. Philip's tidal percussion, Krönig's apical outline, Goldscheider's apical percussion, Litten's diaphragm phenomenon, and Kuthy's acromial sign are all valuable, but they re-

quire more or less time and skill to elicit them, and consequently cannot be depended upon as affording valuable aid to the busy practitioner.

Far be it from my purpose to apologize for hasty and incomplete examinations. Incipient tuberculosis cannot be diagnosticated in a hurry nor without careful, painstaking examination. A bare chest is the first demand of physical examination. The essential methods of examination must be common property of the profession before much headway can be made in early diagnosis.

The great need in incipient pulmonary tuberculosis has been for some reliable sign which would suggest the presence of tuberculosis or help the practitioner to locate a lesion with a degree of definiteness when suspected. Often, fairly convinced of the presence of tuberculosis by the clinical history, the physician is forced to make a negative diagnosis because he cannot find the evidence upon physical examination to confirm his suspicions. Tidal percussion, apical outline, and the movements of the diaphragm will not help the average man, because he is not experienced in their detection.

There are certain signs, however, which, I believe, are within the reach of practically all practitioners of medicine which will give valuable evidence in favor of the presence of small apical lesions. One of them I have emphasized many times, but cannot refrain from emphasizing again; I refer to the lagging of one apex behind the other in a one sided lesion, or the lagging of both apices in a double apical lesion. A lagging apex should always make the practitioner suspect the presence of a lesion at the apex. To be sure, the fact that lagging is elicited does not furnish any evidence as to the nature of the lesion, as to whether it is active or quiescent; but it does call attention to that apex as being the seat of a pathological process and as requiring careful examination before a definite opinion is given. Lagging is best elicited by the examiner standing behind the patient, who is seated on a stool. The examiner's hands are so placed that the thumbs are over the supraspinous fossæ and the fingers are allowed to extend down over the anterior portion of the chest. Any irregularity in the air entering either apex is quickly noticed.

Another sign which I believe can be made of general use among the practitioners of medicine is muscle rigidity, and if thoroughly appreciated by the profession, I believe it could be relied upon to give accurate information. The sign was first described by me last year, and now, after using it for eighteen months, I feel that I can recommend it as being the most suggestive sign that we have in chest lesions. I have not seen a single instance where the muscles covering the apex of a lung were in spasm in which there was not an inflammatory process (usually tuberculous) in either the apex of that lung or the pleura covering it; and, suggesting still greater value for the sign, I have not seen a single instance of acute inflammatory change in the apex of a lung or in the pleura covering it in which the muscles covering the apex were not in the state of spasm.

In six instances which have recently come to my notice, where the first symptoms which called the patient's attention to a probable tuberculosis was a spitting of blood, spasm of the neck muscles over the lesion made certain the location of the lesion. In each instance it was confirmed by auscultation.

Muscle rigidity as found in the muscles of the neck and extending down to the intercostals and pectorals when the apex of a lung is the seat of an active inflammatory process is as constant as rigidity of the abdominal muscles in the presence of inflammation of the underlying viscera, and when once appreciated is easy of detection. Since the apex of the lung is the part which is usually first affected with tuberculosis, this spasm of the muscles assumes an importance secondary to no other sign. The muscles showing the spasm vary according to the location of the lesion. If the lesion is on the anterior portion of the apex the sternocleidomastoid, scaleni, pectorals, or intercostals, singly or in combination, show the spasm; while if the lesion is on the posterior aspect of the apex the trapezius, levator anguli scapulæ, and rhomboidei show it.

In order to appreciate the spasm it is necessary for the examiner to familiarize himself with the natural contour of the neck and also with the normal consistence of the muscles.

It is also necessary to take into consideration whether or not the patient is right or left handed, for this spasm over inflammatory conditions gives the same impression as that given by a muscle which is hypertrophied from use. It is firmer to the touch.

Confusion arising from the fact of the patient's being either left or right handed holds only for the trapezius, levator anguli scapulæ, and the pectoral. It does not hold for the sternocleidomastoid and scaleni. Fortunately, these latter muscles may be depended upon in a large proportion of cases. This sign can best be detected by a very light touch. Deep pressure blunts perception and makes it impossible to detect the sign as readily as it can be detected by a touch which is much lighter.

In this short paper I have not endeavored to cover the entire field of early diagnosis, but I have attempted to urge a few simple measures which, I believe, will greatly aid in an earlier detection of this disease.

THE DIAGNOSIS OF TUBERCULOSIS IN DOUBTFUL CASES.*

By Gordon Wilson, M. D.,
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There is a saying that the skin lesions of syphilis can simulate the appearances of every other skin disease, and I think we can say with reference to incipient tuberculosis that its symptoms are just as frequently as suggestive of other diseases as they are of tuberculosis of the lung.

I desire to-day to present a few cases which, in the past, have taught me to look for tuberculosis of the lungs even when the case appeared "textbook" in character of some other disease.

Case I. The first case was that of a young girl, Swedish by birth, aged about twenty-three, who was admitted to my service at the University of Maryland Hospital one summer with a diagnosis of ulcer of the stomach. Her history was as follows: She complained of chronic indi-

*Read by invitation at the annual meeting of the North Carolina State Medical Society, Wrightsville Beach, June 22, 1910.

gestion for some years past with acute exacerbations at times; her family history was negative for tuberculosis, malignant disease, mental disease, and circulatory and renal disease. There had been no exposure to tuberculosis as far as the patient knew. Her past history was unimportant save for the diseases of childhood, and since coming to this country, where she had worked as a housemaid, her general health had been good save for indigestion.

Her history obtained on admission was as follows: For some years past she had suffered from indigestion, the symptoms of which were mild anorexia, a feeling of fullness after eating, a tendency to flatulence, and, at times, rather severe "heart burn" and pain and tenderness in the epigastrium. There had been little or no nausea or vomiting, although on one occasion she had vomited blood, a very small amount, and had once passed blood in her stools, both of these having occurred within the six months prior to admission. She gave a negative history for renal, cardiac, and circulatory symptoms, and the usual questions in regard to cough, fever, hoarseness, night sweats, loss of weight, and loss of strength brought a negative response. On seeing her for the first time, forty-eight hours after admission, I noticed on her chart that her temperature on admission was 99.8° F.; pulse, 100; respirations, 18; but that the temperature after she was put to bed remained at 98° F. or below, both morning and afternoon, although her pulse remained above 80.

The routine complete physical examination showed as follows: Fairly well nourished and well developed girl, lips and mucous membranes of good color, throat, mouth, and ears apparently normal; no glands palpable in neck; heart not enlarged, sounds clear at apex and base; pulse regular in force and rhythm, good volume though apparently low tension. The examination of the lungs showed a very slight lessening of the movement on the right as compared to the left side; palpation negative; percussion showed that the note above the right clavicle was a trifle higher pitched than above the left, and that the apical dulness did not extend quite so high on the right side. On auscultation the breath sounds were apparently normal throughout both lungs, and no râles were to be made out, even on deep inspiration, following expiratory cough, the only abnormity noted being that the breath sounds were a trifle intensified and expiration a trifle prolonged above the right clavicle. The examination of the abdomen showed slight tenderness on deep palpation in the epigastric region, but was otherwise negative.

Artificial dilation of the stomach and the giving of a test meal was not done for some reason for three or four days, and the patient said that she felt almost entirely relieved of her symptoms, although she received no treatment save a liquid diet and rest in bed. Dilatation of the stomach showed, one week after admission, slight, if any, enlargement of that organ, although apparently there was a little ptosis, and the stomach analysis showed no retention of food, the absence of lactic acid, and the presence of normal amounts of hydrochloric acid and "combined acids."

Although her symptoms had been so suggestive of gastric ulcer and her lung symptoms absent and the physical findings in her chest simply indicated that if there was a tuberculous lesion it was probably healed, yet the fact that her symptoms had subsided so quickly on rest and her gastric analysis showed no hypochlorhydria, we thought that, possibly, her stomach symptoms might be due to tuberculosis of the lungs, and we tried to find out if her temperature would rise on exercise and made her walk rapidly up and down the ward many times during the day, having her temperature taken every two hours, and found that her temperature went to a trifle above 100° F. after taking this exercise, though it returned to normal on remaining in bed. It was then decided to give her the tuberculin test, and three milligrammes were given subcutaneously, and following it she had the characteristic rise of temperature accompanied by mild, well marked constitutional symptoms although there was apparently no focal or local reaction, thus confirming our tentative diagnosis of tuberculosis of the lungs.

This case I should, undoubtedly, have failed to diagnosticate if I had had the patient at my office instead of in the hospital, as I might very well have overlooked the slight clues of temperature and disappearance of symptoms on rest had I not been checked up by the knowledge that I must do things thoroughly as I was setting an example to my students.

Case II. The second case is of interest in showing how one might be led astray if too much credence is put in laboratory findings and not sufficient faith is held in that all valuable bedside study.

This patient was the father of one of the physicians in the hospital, and was admitted with the following history: Some time prior to admission he had had a mild attack of "grippe," although his son, who was not attending him, had thought at the time that he had made out a small patch of bronchopneumonia at the base of the left lung behind. Later a pleurisy with effusion appeared on that side, and he was twice tapped, and moderate quantities of a clear yellow serous fluid were withdrawn. On admission to the hospital, where he really came for convalescence, it was soon noted that he had a slight afternoon rise of temperature, not exceeding 100.5° F., and that his appetite was poor; in fact, he was "going down hill" rather than convalescing. Examination of the blood showed a polymorphonuclear leucocytosis of about 11,000, and the physical examination showed a markedly impaired note from the eighth rib to the base over the left lung, behind, and over this area the breath sounds were extremely distant but otherwise negative. The examination of the lungs showed nothing abnormal or even suggestive outside of the area noted above, and it was decided to tap him again. This was done three times in three separate places over the suspicious area with an extremely large needle and trocar, and nothing was obtained, and the diagnosis of thickened pleura following pleurisy with effusion was considered. During this time, while in the hospital, examination of the sputum was made daily with negative results, save on one day when typical and characteristic tubercle bacilli were found in the sputum. This seemed to clinch the diagnosis and to account, in a great measure, for his symptoms, but as we could not account for his leucocytosis, and as the note was so very flat at the base behind, and as there was no evidence of a tuberculous focus on physical examination, we were just a trifle doubtful about sending him to a sanatorium, and after thorough discussion we decided that an exploratory incision over the suspected area would be without danger and might account for the leucocytosis. This was done and a pocket of pus was found with pus so thick that it could be poured only with difficulty from a glass. Following the opening and drainage of this cavity the temperature remained normal, and the patient really began to convalesce, gaining strength and weight rapidly, and is now in good health save for a sinus which has not entirely closed.

My theory in regard to this case is that the patient had a bronchopneumonia starting from an old tuberculous focus, and that the empyema was secondary to the bronchopneumonia, while the tubercle bacilli which were found in the sputum came from the old focus which really did not require treatment, as compared, of course, with the empyema.

These two cases are good examples of the introductory remarks to this paper, as in both of them the symptoms were more characteristic of other things than their true cause. I will now give the history of two cases in which we had very good grounds for diagnosticating, or at least suspecting, tuberculosis of the lungs and yet which turned out to be other diseases.

Case III. The first was in the case of a former interne of the University of Maryland Hospital who gave the following history: Family history good and the past history negative save for the diseases of childhood. For two or three years the patient had had mild neuralgic or myalgic pains in different parts of his body, but unaccompanied by sore throat, nor were the joints affected at any time. He had also had, during his year's residence in the hospital, mild indigestion with attacks which simulated chronic appendicitis. He had had no cough or pulmonary symptoms, had lost a little weight, which could be ascribed to his hard work, and, in fact, was in fairly good health.

He decided, however, to have his appendix removed before leaving the hospital and was operated upon under ether as a general anæsthetic, and there was found an adherent appendix, but no acute inflammation. The appendix was removed and the wound closed, and the patient did well for two or three days following the operation, when it was noted that he was having an afternoon temperature of from 100° to 101° F., rapid pulse, 110 to 120, a tendency to clearing of his throat, but no cough or sputum; and it was feared that there might be a lighting up of a tuberculosis lesion, as is so frequently the case following a major operation with a general anæsthetic. The examination of the abdomen showed nothing to account for the rise of temperature, and the blood examination showed a leucocyte count of about 8,000, which might well be considered normal. Careful examination of the lungs showed nothing abnormal, and a complete routine examination was then made, and there was found a bilateral enlargement of the tonsils with some congestion, the examination otherwise being negative. The tonsils were then swabbed with a ten per cent. solution of silver nitrate twice a day, and Dobell's solution was used at three hour intervals. Immediately following the swabbing of the tonsils the temperature and pulse returned to normal and remained so during the further period of his convalescence from the operation, which, I think, can be said to be a therapeutic proof of the diagnosis of nonsymptomatic amygdalitis accounting for his symptoms and fever.

This case would have been undiagnosticated or, at least, incorrectly diagnosticated, if a thorough routine examination had not been made.

The last case is of interest on account of the unusual combination of diseases present and their symptoms, when combined, accounting for the diagnosis of tuberculosis of the lungs that was made.

Case IV. The patient, a woman of about forty-five, was sent to me to be examined for admission to the State Sanatorium for Tuberculosis, and she gave the following history: For a period of about three months she had had a cough which had increased, somewhat, in severity accompanied by some little sputum, some loss of strength, mild digestive symptoms, quite well marked dyspnœa, tachycardia, pulse ranging from 100 to 120, and some loss of weight. The sputum examination was negative, but there had been a history of hæmoptysis. On account of the hæmoptysis and the other symptoms I had little doubt as to the correctness of the diagnosis, and only examined her to make sure that she was not too far advanced for admission to the sanatorium. On examining her, stripped to the waist, I noted that she had very well marked enlargement of the thyreoid gland, although there was no exophthalmos present. Her cough, which I noted during the examination, was of the typical laryngeal type, almost paroxysmal, and not unlike that seen in cases of aneurysm of the arch of the aorta. Her pulse was 120 to the minute, of fair volume and tension, and there was noted quite a well marked, fine tremor of the fingers. The examination of the heart showed a slight increase of cardiac dulness to the left and also a little to the right of the sternum, the apex beat being in the fifth interspace just about the midclavicle line. On palpation there was noted a well marked systolic shock and a slight presystolic rumble on auscultation, although there was no thrill to be felt at the apex. The second pulmonic sound was slightly louder than the second aortic sound. A most careful examination of the lungs failed to disclose anything suggestive of a lung lesion, and I was inclined to think that it was a case of Graves's disease complicated by mitral stenosis. I, however, sent her to the sanatorium for diagnosis, where she remained a month and where many sputum examinations were made with negative findings, and a subcutaneous tuberculin test was negative.

I think we are justified in accounting for the symptoms in this case by the two diseases mentioned, and yet few of us would hesitate to suspect tuberculosis of the lungs in a patient giving a history of cough of three months' duration with hæmoptysis, tachycardia, and loss of weight and strength, and yet all of these symptoms are readily understood when the two disease before mentioned are taken into consideration.

Before closing I should like to say a word in regard to the tuberculin tests, both as to their value and their dangers. The oldest one, the subcutaneous method, is, I think, to-day the most valuable and the least dangerous; its only danger, to my mind, is where it is used in cases which can be readily diagnosticated by other methods, and when given with amounts of tuberculin exceeding three milligrammes of the old tuberculin. There is one exception to this and that is in the cases of chorioiditis or retinitis, where, I think, the temporary spread of inflammation, in other words, of the focal reaction, might cause injury to the fovea and thus destroy central vision.

In regard to the Calmette, or Wollf-Eisner, or ophthalmotuberculin test, I would say that I consider it too dangerous to use on account of the cases of ulcer of the cornea resulting from it, rarely, and the recurrent conjunctivitis which occurs not infrequently, due to the sensitizing of the tissues through the test.

The von Pirquet, Moro, or other skin tests, I think, are of value from a negative standpoint only in adults, viz.: in those who are not thoroughly poisoned by the toxine of the disease and in whom we suspect tuberculosis; a double negative reaction with full strength old tuberculin enables us to rule out tuberculosis as a cause for the condition in the patient. As most adults give a positive tuberculin reaction, it can be readily seen that a positive reaction in an adult is of no help in diagnosis. This, however, does not apply to children under seven; the younger the child the greater the value of the skin test in diagnosticating the condition positively.

As has been pointed out by Hamman, our most valuable instrument is the thermometer, and, as Minor has held, careful physical examination of the patient is our most valuable means to a diagnosis, of course, not neglecting the sputum findings and tuberculin tests; still, I think, as I said in my introductory remarks, that we must always remember that tuberculosis is a simulator of other diseases, and that there is no disease which requires such thorough and careful study both of the patient's history and his physical examination as does tuberculosis, and we must not stop in our study of a case prior to diagnosis until we have accounted for the symptoms satisfactorily by some other disease and have ruled out tuberculosis of the lungs.

1318 North Charles Street.

ALCOHOLIC AMNESIA, WITH THE CLINICAL REPORT OF A CASE.*

By N. S. Yawger, M. D.,
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Among the various forms of mental disturbance is diminution or loss of memory. This may result from different causes, an important group being due to intoxications, and the particular intoxicant concerned in the case here reported is alcohol.

Alcoholic amnesia may be either functional or organic, partial or complete, and again it may be

*Read before the Philadelphia Psychiatric Society, May 13, 1910. The case is reported by permission from the Philadelphia Hospital for the Insane.

temporary or permanent, these being terms which are self explanatory. Another important class is worthy of a word of explanation. We speak of retrograde amnesia, where the failure of memory is for a period of time immediately preceding a certain forgotten event, antegrade, where the attack is subsequent to such a time, and finally, with defective memory at both of these times, we have a condition spoken of as anteroretrograde amnesia.

Whiskey is the substance most usually consumed, though the excessive use of other drinks may result in this state. The amount of the intoxicant varies, but many of the patients have been known as hard drinkers and frequently they have begun drinking early in the morning.

Mental symptoms other than amensia are not of such common occurrence as in delirium tremens, and in the grave alcoholic insanities such as the delusional, paranoid, and pseudoparetic forms.

The failure of memory may appear abruptly, but it usually comes on gradually, and recent occurrences are most often forgotten. The individual may be able to talk freely of events which have come before him a long time previous to the amnesic period. While word blindness and word deafness are not present, those impressions when received are but transitory. Hallucinations and delusions are either not conspicuous or are totally absent. An alcoholic history is usually obtainable from the patient or someone else, and the appearance of the individual may be that of a drinking man, but in the absence of these data there is one condition which should be thought of and that is the psychic equivalent of epilepsy; subsequent observation may be necessary to clear up the diagnosis.

A difficulty which at times confronts the examining physician is that of simulated amnesia. There may be embarrassing or even criminal acts to conceal and a convenient lapse of memory is at times resorted to.

With good attention the condition is generally a hopeful one, but recovery does not usually occur under several weeks, and even years have elapsed before full memory has been regained. For care and treatment these cases often require detention in an institution. They need abundant nourishment for they are underfed, indeed most of them have been for a long time substituting alcohol for food. A reconstructive tonic is always indicated, and the bowels, kidneys, and skin should be kept active for the elimination of any remaining alcohol and effete body products. Drugs and good hygiene are used to place the patient in the best possible physical condition. There is no specific for alcoholism. It is absurd to believe that will power can be supplied in bottles. Of course a patient may be kept under the influence of some drug while alcohol is being withdrawn, but there is no special drug virtue in these so called "cures," otherwise there would not be so many new ones brought forward from time to time. Psychotherapy comes in usefully. These patients often strive diligently to overcome their mental failure and therefore they should be reeducated. Later suggestion can be employed advantageously, and possibly some of the special hypnotic methods may have value. Forel, of the University of Zurich, whose experience has been as large as that of any one, reports good results from the use of suggestion. Dubois, of the University of Berne, uses psychic treatment almost to the exclusion of drugs in his management of various psychoses. We know the temperance societies hold some cases in this way; they have backsliders, of course, but unfortunately we do also.

In these times when patients frequently seek advice given by others than a physician, it is well to remember that the importance of certain medical matters is occasionally emphasized to the lay mind by persons outside of the profession, and the condition resulting from our partial neglect of a therapeutic measure may be worthy of a moment's notice. Christian science has in part become established as the result of a need; if this were not true, this cult could not have grown so rapidly. Its spread is not due solely to its having become a fad. Persons often desire and are benefited by psychic support and guidance, and if it is not given by a physician, they will turn to some one who is more obliging. No doubt, as has been charged, the leader of this so called science obtained most of her ideas of these matters from medical men (one of her husbands was a physician) but a glance at her writings shows at once she is not sharing honors; however this may be, the fact remains that important medical work has been deflected to a set of persons who are not properly qualified to assume this responsibility.

Because of the intelligence and earnest endeavor to give accurate information concerning his condition, it was possible to make a somewhat detailed study of the following case:

Patient was single, aged fifty-three, and a school teacher by occupation. Family history was negative except that his father drank quite heavily. Owing to some slight disability of his lower extremities which dated from childhood, he was given sufficient education to become a teacher. He had used alcohol moderately for some time, but for the last two years had been drinking excessively, though he still attended to his duties. Early in April of 1907 he was guilty of some trifling impropriety which gave rise to some unpleasant comment, and just about this time there was beginning failure of memory. A few days later he left his home saying he would return the following day. A note found just after his departure stated that he was unfit for teaching and that he was leaving to take a Keely "cure." Some days following, without knowing how or when, he arrived in this city and was taken into custody by an officer to whom he had just said if he were not arrested he would kill somebody or commit suicide. The time from the 12th to the 20th was spent in the detention ward. For some days he lay in a profound stupor, taking no notice whatever of his surroundings. This state was followed by marked mental confusion, a feature of which was auditory and visual hallucinations, and upon the 30th he was transferred to the Hospital for the Insane. Even at this time his memory was wanting except for a few isolated impressions, as shown by his inability to recall his own name, his occupation, or if he were married. However, he did remember his age and birthplace. From then on recollection gradually returned. On May 3d, while not sure of his name, he knew his father was dead and was quite certain he was not married. On the 4th he seemed depressed because he could not remember more, though he retained most of what he had previously recalled. By the 5th he surprised his interrogator when he announced that he could give his correct name; this he did.

Events prior to January of that year were now quite readily recalled. Careful examination revealed a poverty of memory images, especially visual, an instance of this was his inability to recall how his mother's hair looked, though he remembered that it was gray. On the 7th he said, "I can remember my boyhood pretty well now," and

he was much more able to recall the visual appearance of things. By the 13th, he thought he recalled teaching school after Christmas and upon the 15th remembered many events that had taken place just before his admission to the detention ward; then followed some days of which he was totally oblivious. Many occurrences during his stay in the Insane Hospital now became firmly fixed upon his mind, and in about two months from his admission his memory had fully recovered. After complete restoration, when asked which was the more confusing, the hallucinations or the loss of memory, he replied, "The hallucinations, I think; I saw I could not trust my senses and did not know what to believe."

This was a very grave case of complete alcoholic amnesia, and I feel reasonably sure that the psychic treatment which the man received almost daily for several weeks, shortened very materially his illness. Perhaps it saved him from permanent mental disability.

1728 CHESTNUT STREET.

Our Readers' Discussions.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

CI.—How do you treat chronic nasal catarrh? (Closed August 15, 1910.)

CII.—How do you treat other electric shocks than that of lightning? (Answers due not later than September 15, 1910.)

CIII.—When can a pulmonary tuberculous patient be discharged as cured? (Answers due not later than October 15, 1910.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED*) that the answers be short; if practicable no one answer to contain more than six hundred words.*

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The prize of $25 for the best essay submitted in answer to question C was awarded to Dr. Neil D. Graham, of Washington, D. C., whose article appeared on page 422.

PRIZE QUESTION C.

THE TREATMENT OF ŒDEMA OF THE LUNGS.

(Continued from page 424.)

Dr. Henry F. Kramer, of Brooklyn, N. Y., observes:

The advent of pulmonary œdema in many pathological conditions usually predicts a fatal termination. Still, many patients recover, the process subsiding as rapidly as it comes. It usually affects both lungs. Accompanying many diseases it is the constant attendant of none.

Rational treatment is based on an understanding of the mechanics of pulmonary œdema, Welch's theory being generally accepted. He considers passive pulmonary congestion chiefly responsible, hinting also at a possible change in the blood plasma. Two causative factors are recognized: 1. Obstructed outflow from the pulmonary veins, as in mitral stenosis and insufficiency. 2. Cardiac weakness, particularly that of the left ventricle. The high intrapulmonary pressure thus produced causes extreme congestion of the capillaries, which being less resistant to increased tension than those of other organs, allow exudation and transudation into the vesicles and the fibrous tissue between them. This exudate consists of red blood cells, epithelian cells from the bronchi and alveolar walls, and a few white corpuscles, the red cells predominating markedly.

Prevention of the onset of œdema of the lungs is to a certain extent possible, in that form terminating chronic Bright's disease, the anæmias, and all chronic processes accompanied by cachexia, by shifting the patient frequently in bed, purging with calomel and salines, and proper cardiac support. When once established, this form of œdema lingers and if relieved, only returns to be fatal.

The treatment of the œdema must necessarily be modified to suit the disease to which it is consequent. Obstructive congestion occurring suddenly in mitral stenosis and insufficiency, as indicated by the auscultatory signs, cyanosis, stertorous and bubbling breathing, the high blood tension, rapid and often arhythmic pulse, is as quickly relieved by venesection. A cannula in the median basilic vein will soon draw off from fifteen to thirty ounces of blood, the amount being regulated by the rate and quality of the pulse and the reduction of the tension. Bleeding is beneficial in œdema from many other causes and can be done in children, smaller quantities of blood being withdrawn.

Besides actually reducing the total bulk of the blood, there are measures which induce increased blood supply to peripheral parts at the expense of the lungs. Dry cups over the posterior chest wall continuously applied for one half hour or longer, act by counterirritation, to relieve subadjacent congestion. The mustard pack, made by wringing large Russian towels out of strong hot mustard water and wrapping them about the patient, dilates the cutaneous vessels. Hot foot baths and hot water bottles to the feet work toward the same end.

Of drugs, nitroglycerin is probably the most valuable, being useful in all cases, irrespective of the cause. Besides acting as a cardiac and respiratory stimulant, it reduces the total blood pressure. Having a greater dilating effect on the vessels of the brain and skin than those of the rest of the body, this drug drains the lungs of blood to supply these parts. During my hospital service cases of cerebral apoplexy with pulmonary œdema were given 1/100 grains, hypodermically, every hour for from ten to twenty hours, or until the tension was reasonably reduced, without producing toxic effects. In cases with a pressure of 200 mm. Hg. or over it was often possible to reduce the tension 50 mm. by this means alone.

In œdema accompanying acute inflammatory conditions of the lungs, emboli, and poisoning by inhalation of noxious gases, I have used adrenalin, from five to ten minims, intravenously every half hour for several doses, the needle being thrust directly through the skin into the vein. The effects are temporary and depend upon cardiac and respiratory stimulation rather than the vasomotor action of this drug. It makes the breathing deeper and

easier. Oxygen has seldom given beneficial results in my experience, except perhaps in a few cases of œdema in children. The latter seem to respond so much more readily than adults to a combination of oxygen and artificial respiration, added to the other details of treatment. Artificial respiration should be employed in all cases except the brain conditions and injuries causing œdema. In these the danger of dislodging a thrombus or of inciting renewed hæmorrhage is evident.

The cardiac stimulants are always indicated to overcome the left sided heart paresis. The best of these are digitalis, strophanthus, caffeine, and strychnine, which can be used in succession.

In view of the success attending the use of aerotherapeutics in other pulmonary conditions, the use of compressed air in pulmonary œdema seems worthy of investigation. Its effect of driving blood from exposed surfaces to protected organs might be controlled by a suitable mask to act on the vesicular walls alone, thus establishing a resistance to support them against the increased intrapulmonary blood pressure and to that extent counteract the transudation.

Dr. Lester R. Mellor, of Syracuse, N. Y., says:

As pulmonary œdema is never a primary condition but always the result, or a symptom of, circulatory disturbance within the capillaries and smaller bloodvessels of the lung, it is fitting that we recall to mind those diseases which cause such disturbance and ultimately cause œdema.

Œdema of the lungs can be said to exist when there is an exudation of serum from the engorged capillaries into the pulmonary interstitial tissues and alveolar spaces of the lungs. This is due, in most cases, to obstruction in the outflow of the venous blood from the lungs which the right ventricle has not overcome because of the back pressure exerted through the faulty left ventricle. Thus cardiac weakness is one of the principal causes of pulmonary œdema. Any diseased condition of the heart where the circulation is sluggish, would be apt to develop an œdema, especially at the basis of the lungs. Intense congestion, as in pneumonia, chronic nephritis with its high arterial pressure and blood changes, cerebral affections, new growths in the lungs, infarcts, and tubercles, and in the terminal stages of all acute and chronic diseases, œdema of the lungs may develop. It is thought to be due, not only to increased pressure in the capillaries of the lungs, but to blood changes, a diluted blood plasma, making it more possible for the serum to go through the vessel walls.

Having emphasized the importance of looking to the primary disease and knowing that further comment upon these diseases, as also any reiteration of the symptoms of pulmonary œdema would be out of place in this short paper, I will say a few words upon treatment.

The first thing to accomplish is active catharsis and there is nothing better than croton oil, two minims, repeated in one hour, if necessary, so as to secure thorough watery evacuations. It can be diluted with olive oil and dropped upon the tongue. Usually its action is prompt. Encourage free diaphoresis and diuresis by giving plenty of heat and spirit of nitrous ether, one drachm, every three hours. Hot foot bath will aid in this. Watch the heart closely, it is the organ to sustain, and if not too weak give digitalin, 1/100 grain, every three hours, using, if necessary, 1/50 grain. This not only strengthens the systole, improving the circulation, but prolongs diastole, thus reserving its strength. I usually give atropine sulphate, 1/100 or 1/50 grain, every four hours, to lessen secretion and to stimulate respiration. This can be alternated with digitalin, thus getting stimulation every two hours. I have secured better results from digitalin than from tincture of digitalis as one is not always sure of the latter's strength. Aromatic ammonia and brandy can be given hypodermically at intervals when rapid stimulation becomes necessary. Give little or no fluids as concentration of the blood is to be desired.

As in the majority of cases, œdema of the lungs is but a signal of the approaching end, what we do, must be done quickly and the sooner our treatment is instituted the sooner we shall see results.

In almost all cases which come under my care I use dry cups to the chest, anteriorly and posteriorly. I have observed marked results follow shortly after their use.

I have never tried wet cupping or venesection in these cases but feel that in cases of marked cyanosis with extreme anxiety, these methods would prove of some value. The best we can do for these patients frequently fails utterly and we see them sink into coma and die, apparently, unaffected by our methods of treatment.

Dr. Antonio D. Young, of Oklahoma City, Oklahoma, states:

I will speak only of the treatment of the attack itself, and not of the underlying cause.

In the acute form the first indication is to sustain the heart. This is accomplished most satisfactorily by the subcutaneous injection of caffeine sodium benzoate in from five to ten grain doses, as the judgment of the physician dictates. By the administration of this drug the heart muscle is stimulated as well as the vasomotor centres and the peripheral vessels are dilated. One one hundredth grain of atropine should be included in the initial dose for the purpose of checking the excessive secretion. As soon as the patient has received the caffeine and atropine, mustard plasters should be applied to various areas of the lower extremities and ten to fifteen ounces of blood withdrawn by venesection. Both of these measures relieve the pulmonary engorgement. Dry cups should now be applied to the surface of the chest, after which a thick jacket poultice, so arranged that it will maintain a reasonable amount of heat for a considerable period of time, should be applied to the entire chest after having reddened the skin by the application of mustard. If there is time, saline cathartics should be given freely. The caffeine sodium benzoate is used because it is more soluble and less irritating than the citrate, and, therefore, more suitable for hypodermic administration. The jacket, of which mention is made, should be made of cheese

cloth in two pieces, one for the front of the body and one for the back, cut to fit and coming together over the shoulders and beneath the arms. It should be double and filled with bran, or corn meal. After the jacket is in place water bottles placed around the body will supply the heat.

Many of these cases are quickly fatal, notwithstanding the use of the most energetic therapeutic measures; but if the condition of the patient improves the same treatment should be continued until recovery is assured.

The management of the chronic form of œdema of the lungs lies in the treatment of the disease causing it, and should be considered more as a prophylactic measure than a curative one. When the œdema actually occurs the treatment is the same as in the acute form.

Theoretically adrenalin chloride would be serviceable in acute pulmonary œdema, but I have never tried it.

(To be concluded.)

Correspondence.

LETTER FROM LONDON.

The Decreased Birth Rate.—The Action of Digitalis.—Spinal Analgesia.

LONDON, *August 9, 1910.*

The meeting of the British Medical Association last week was without doubt the best attended meeting for many years. Though some of the sectional meetings were very sparsely attended, the majority were well patronized. One of the most popular sections was that on Medical Sociology. On Friday last Dr. Ballantyne read a very interesting paper on the decrease of the birth rate. He said that the falling birth rate was due to the dissemination of the knowledge of the possibility of limiting the number of pregnancies, the late age at which marriage was contracted, and possibly the increased participation of women in intellectual pursuits, athletics, and factory labor. He also spoke of the high antenatal death rate as a factor in the reduction of the population. He regarded this waste as a menace to the nation and sketches the manner in which the restoration of a normal birth rate might be effected. He was hopeful, but realized that the tide was still flowing in the other direction. Dr. Freemantle considered the problem from a statistical point of view and deduced from the figures that the decline of the birth rate was due to knowledge of methods of prevention, to economic factors chiefly arising from immoderate competition, to a lack of discipline, and to an increase of self indulgence. Dr. Buist regarded the question from a biological and economic point of view and in substance found that the evidence of disadvantage from the falling in the birth rate was not convincing. Biologically, the characteristics of those classes in which the fall was most marked were such as suggested a positive gain from the fall, while economically the increased industrial employment of women led to underselling and in this direction the falling birth rate might be regarded as a strike of parents for better social conditions. Dr. Hunter held that the elder children of a family were more liable to suffer from defective conditions than the younger ones, and the seventh child was the best placed. A marked rise in defect occurred with the eighth born. The same applied to children of elder born and late born parents. Artificial sterility begat natural sterility and natural sterility begat idiocy. Dr. Dulberg advocated measures which would diminish infantile and juvenile mortality. The most valuable measure was insistence on breast feeding. Wet nursing should be followed as a profession by a greater number of women who now turned to the factory. Professor Benjamin Moore doubted whether it was physiologically sound to advise parents to reproduce as rapidly as possible. Regarding the matter from the point of view of the women, he considered it necessary to provide a rest between pregnancies. Gestation and lactation called for recuperation, and he believed there should be a three years' interval between the children and that a working man's family would be better if not more than four children were born. Dr. Grace Cadell agreed with Dr. Buist and Professor Moore and spoke strongly of the necessity of preventing marriage when one of the contracting parties was suffering from gonorrhœa, the chief cause of sterility. She did not think that it was wise that a woman should bear a child every year, and advocated a prolonged period of abstinence from coitus after the birth of a child, as prescribed by the Jewish law. Dr. Gilchrist dealt with the social aspects of the problem from the eugenic standpoint. Dr. Helen Hanson believed that the integrity of the family was on the increase while the birth rate was falling. She held that it was the husbands and not the wives who wished for a limitation of the number of children. Mr. Somerton Clark supported the idea of employing measures to check the fall in the birth rate in the upper classes. Dr. Ballantyne then suitably replied.

Another very interesting sectional meeting was that of the Pharmacological Section. Professor Wenkebach, of Gröningen, opened a discussion on the effects of digitalis on the human heart. He exhibited a number of tracings showing a two fold effect of digitalis—slowing of the beat and irregularity of the pulse. These two effects were always found together. Where slowing occurred there was always also irregularity. This was due to strong vagus action. The strengthening of the heart's action was due in all probability to the effect on the muscular tissue. With small doses there was increase of tone with a deeper diastole and a deeper systole. With larger doses the diastole increase disappeared and the systole increase remained. It was not right to limit the use of digitalis to conditions where there was loss of tone. Therapeutic doses might do harm by lessening conductivity, giving rise to partial heart block. The heart muscle became less excitable with small doses. He had known extra systoles to disappear under treatment with small doses. With large doses excitability was increased and extra systole might arise. Dr. James Mackenzie described the scheme for testing the action of digitalis which he carried out at the Mount Vernon Hospital. The teaching was so contradictory on all points that he had de-

termined, as it were, to make a fresh start. In estimating the effect of digitalis upon a patient he paid much attention to subjective sensations, and changes in these often preceded the objective signs. The pulse and respiration rate and blood pressure were taken before and after exercise. All drugs used in the work were submitted to Professor Cushny for examination. In these and other ways he was fast accumulating a mass of trustworthy data upon which a judgment might be formed. Dr. H. H. Turnbull described some of the results which had already been obtained under Dr. Mackenzie.

In a recent number of the *Journal of the Royal Army Medical Corps* Captain J. Dorgan, R. A M. C., reports an extremely interesting personal experience of the effects of spinal analgesia. He was operated on for radical cure of a right inguinal hernia. He lay on the right side with his knees drawn up and the lumbar region arched. Stovaine was injected between the second and third lumbar spines. He felt the slight prick of the needle in the skin, and after waiting anxiously for the further introduction of the needle into the spine, from which he expected pain, he asked the operator when he was about to inject the stovaine and was agreeably surprised to learn that it had been done some time previously. After a minute or two he began to feel a warm glow spreading down the right leg, accompanied by a sense of tingling and a feeling as if the leg was becoming swollen. Five minutes after the injection a pin prick in the third right lumbar area was felt only as a pressure, as if pressure had been made with the finger tip. Loss of tactile sensibility rapidly passed down the leg to the toes, and when a pin prick was no longer appreciated he could still move his ankle and toes. After about six minutes the right leg felt heavy, congealed, and immovable, and anæsthesia was absolute. Captain Dorgan was then turned on his back and the operation was begun about ten minutes after the injection. He did not know when the operation was begun and was only able to guess by the sound of the forceps and the movements of the operator. The skin incision caused a slight feeling of pressure in the region of the *left* inguinal canal. Throughout the operation any sensation appeared to be referred more to the left side than to the site of the operation. There was slight consciousness that the cord was being touched while it was being manipulated. He was asked to cough, and when he did so he felt as if the abdominal contents were being forced down on to a semicongealed and solid mass in the pelvis. When the conjoined tendon was being stitched to Poupart's ligament he felt with each stitch as if the skin over the spleen was being pressed upon by a warm body, and was not convinced that the feeling was unreal until he placed his hand over the part. Toward the end of the operation, about forty minutes after the injection, sensation began to return. At first there was a feeling as if the part was being irrigated by a stream of tepid water. On being put back to bed, he felt collapsed and sick for about five minutes; otherwise he was quite well. As sensation returned intense pain was felt in the wound. It lasted for six hours and then gradually passed off.

LETTER FROM EDINBURGH.

Visit of the Medico-Psychological Association.—Resignation of Dr. Clouston.—Honor to Professor Bier.—Award to Dr. Hugh Morton.—New Glasgow Professor of Gynæcology.—Proposed School for Tuberculous Children.

Edinburgh, *August 16, 1910.*

The Medico-Psychological Association of Great Britain and Ireland selected Edinburgh for its sixty-ninth annual meeting, which was held on July 21st and 22nd under the presidency of Dr. John Macpherson, the senior Commissioner in Lunacy for Scotland. On July 20th business was transacted by committees, and in the evening a reception was given by Dr. and Mrs. Macpherson in the Hall of the Royal College of Physicians. Next day, after the usual routine business, the presidential address was delivered, the subject being The Conceptions of Insanity and their Practical Result, after which papers were read by Dr. Ford Robertson, on Infective Foci in General Paralysis and Tabes Dorsalis; by Dr. John Carswell, on The Treatment of Incipient Insanity in Observation Wards; by Dr. J. P. Sturrock, on Certain Forms of Insanity in the Criminal Class; and by Dr. R. M. Marshall, on Periodic Attacks of Mental Excitement and Depression in the Chronic Insane. The annual dinner was held in the evening.

On the morning of the 22nd an interesting communication was made by Dr. A. R. Urquhart on Lunacy Administration in Scotland, in which he sketched the history of the treatment of insane patients and surveyed the position of asylums during recent years. Other papers dealt with The Deviation of Complement in Diseases known as Mania, Arsenical Treatment of Protozoal Diseases, and Eugenics and Degeneracy. After luncheon Dr. Robertson, of Craig House Asylum, opened a discussion on The Treatment of Mental Excitement in the Insane. A number of papers were read, all dealing more or less with mental disease. A garden party planned for that afternoon had to be abandoned on account of inclement weather, and the members and their friends assembled in the hall of Craig House instead. On the 23rd the association visited Bangour Village Asylum, where they listened to an account of The Segregate System as Exemplified by Bangour Village, by Dr. Keay, the medical superintendent of the asylum. Luncheon was followed by an inspection of the asylum, after which the visitors were entertained at tea by Dr. Keay.

Dr. T. S. Clouston, late superintendent of the Edinburgh Asylum, which office he resigned some years ago, has now resigned his post of lecturer on mental diseases to the University of Edinburgh. The University Court, at a meeting on June 13th, passed a resolution appreciatory of his services as a lecturer. The resolution contains the following passage: "His great reputation as a specialist in mental diseases and his eminence as a worker and writer on the subject have exerted an inspiring influence upon the large number of students who have attended his classes. They, as well as the University Court, have fully realized the great advantages of having as the lecturer on this subject a distinguished pioneer in the scientific study of disorders of the

mind, and one of the first and most active of the promoters of the benevolent reforms in the care and treatment of the mentally afflicted which have signified the latter half of the previous century."

At the medical graduation ceremony of Edinburgh University, on July 22nd, the Cameron Prize was awarded to Professor August Bier, of Berlin, for his important contributions to therapeutics embodied in his work on spinal anæsthesia and on hyperæmia as a therapeutic agent. Sir Thomas R. Fraser spoke of his work in this connection, and the professor had a most enthusiastic reception when he stood up to receive the prize. While in Edinburgh Professor Bier gave a lecture on Local Anæsthesia with special reference to the intravenous method of its application.

Dr. Hugh Morton, of Gartnavel Asylum, Glasgow, has been awarded the medal and prize of the Medico-Psychological Association for the best essay on The Biochemistry of the Cerebrospinal Fluid in the Insane. The competition was open to assistant medical officers of asylums throughout Great Britain and Ireland. The professorship of midwifery and gynæcology of Anderson's Medical College, Glasgow, rendered vacant by the death of Professor John Edgar, has been given to Dr. John Munro Kerr, a well known Glasgow gynæcologist. Dr. R. W. Philip, of the Royal Victoria Hospital for Consumption, Edinburgh, has forwarded a suggestion to the Edinburgh School Board for the establishment of a school for tuberculous children. He proposes that the site should be within the grounds of the hospital and that it should provide accommodation for a hundred pupils, about half of whom he says would be provided by the hospital.

Therapeutical Notes.

A New Ointment Base.—According to the *Lyon médical* of June 19, M. Monteil, a pharmacist of Montrichard, is the inventor of the following original and novel formula for an ointment base. In a porcelain capsule melt over an oil bath heated to about 257° F. the following ingredients:

℞ Antipyrine, ...188 grammes;
Resorcin, ...110 grammes;
Terpin, ...180 grammes.

On cooling the mass forms a crystalline, transparent substance which may be dissolved by the aid of glycerin to form an ointment of the consistence of cold cream. The proportions given are sufficient for one kilogramme of glycerin. The ointment thus prepared is said to be soothing, antiseptic, hæmostatic, and noncaustic. It may be removed readily by washing with water.

Scarlet Red in Ophthalmic Practice.—Genty directs attention in *La Clinique* for July 19 to the advantages of scarlet red (amidoazotoluolazobetanaphthol) as a nonirritating, inodorous application in certain eye affections. Its use is especially indicated when a rapid proliferation of epithelium is desired. Applied as an ointment in the strength of one per cent. it is less irritating than the mercurial ointments ordinarily employed in suppurative infectious conditions of the cornea, though its action is less powerful. It appears to be especially effective in the treatment of inflammation of the eye lids and of corneal ulcers, whether of traumatic or spontaneous origin. After some experimentation M. Biot (*Thèse de Lyon*, February, 1910) gives his preference to the following formula:

℞ Scarlet red, ...gr. iii;
Wool fat, ...3v;
Petrolatum, ...3ss.
M.

This is applied to the eye twice daily in the same way and in the same amount as ointment of yellow oxide of mercury is applied.

REMEDIES OF RECENT INTRODUCTION.

(*Continued from page 424.*)

Substitol consists of dried fibrin obtained from the noncoagulated blood of horses freed from the red corpuscles and serum and dried at a temperature not high enough to destroy the ferments in the blood. It is used in the treatment of wounds, either as a dusting powder or paste or it may be injected hypodermically.

Syphilis Diagnostic, von Dungern's, represents an interesting development of modern physiological research work. The diagnostic extract consists of a case with sufficient reagents for five tests, and holding one bottle containing 1 c.c. of organic extract in alcoholic solution, one bottle containing 1 gramme of dried amboceptor (goat's serum standardized against human blood), a package of twenty strips of complement paper (a paper impregnated with the serum of guinea pigs), and a sodium chloride tablet.

Syrgol is a combination of colloidal silver (oxidized) and albumoses, containing 20 per cent. of silver. It occurs as brownish black scales, devoid of odor, slowly soluble in two parts of water, readily soluble in glycerin. The 0.2 per cent. aqueous solution has a reddish brown color and a slightly green fluorescence. It is used externally in 0.1 to 0.2 per cent. solution.

Tablogestin is the name applied to a solid form of chologestin put up in tablet form. Three tablets, the average adult dose, are understood to contain sodium glycocholate, 2 grains; sodium salicylate, 2½ grains, pancreatin, 5 grains; and sodium bicarbonate, 5 grains.

Tannismuth is bismuth ditannate, a light yellow powder, which is recommended in the treatment of chronic intestinal catarrh and diarrhœa.

Thyresol, santalymethylether, is an almost colorless fluid with an odor resembling that of cedar wood, and a slightly aromatic taste. It is almost insoluble in water, but is miscible with alcohol, ether, and chloroform, also with ethereal and fatty oils. It is used for the same affections as other sandal wood oil preparations in doses of 7½ minims, three to five times daily, in milk or in gelatin perles. It is also supplied in tablet form prepared with the addition of magnesium carbonate.

Tryparosan is a halogen derivative of parafuchsine, which is intended for use in the treatment of trypanosoma.

(*To be continued.*)

NEW YORK MEDICAL JOURNAL
INCORPORATING THE
Philadelphia Medical Journal
and The Medical News.

A Weekly Review of Medicine.

Edited by
FRANK P. FOSTER, M. D.

Address all business communications to
A. R. ELLIOTT PUBLISHING COMPANY,
Publishers.
66 West Broadway, New York.
Cable Address: Medjour, New York.

SUBSCRIPTION PRICE:

Under Domestic Postage Rates, $5; under Foreign Postage Rate, $7; single copies, fifteen cents.

Remittances should be made by New York Exchange or post office or express money order, payable to the A. R. Elliott Publishing Co., or by registered mail, as the publishers are not responsible for money sent by unregistered mail.

Entered at the Post Office at New York and admitted for transportation through the mail as second-class matter.

NEW YORK, SATURDAY, SEPTEMBER 3, 1910.

THE NEW REMEDY FOR SYPHILIS.

Dr. Wilhelm Wechselmann, physician in chief to the Dermatological Department of the Rudolf Virchow Hospital, in Berlin, presents in another column an interesting clinical report on Ehrlich's new remedy for syphilis, dioxydiamidoarsenobenzol, or 606. This paper, which was prepared for the *New York Medical Journal,* and is the latest authoritative statement of the results obtained from the use of the drug, will be read with the keenest interest by every physician, for every doctor in active practice is almost constantly confronted with some manifestation, either direct or indirect, of luetic infection.

Dr. Wechselmann's report is based on personal observation of more than 600 cases in which this remedy has been used with uniformly good results, though the extent of the good accomplished varied with the nature, age, and virulence of the infection and with the condition of the patient. In his summary he freely cites the experience and deductions of others, all of which tend to strengthen the hope that in the new remedy we have at last a specific for syphilis and probably for many parasyphilitic affections.

Dr. Wechselmann prefers the intramuscular to the intravenous injection and describes the method followed by him. As a rule a single injection of 0.3 gramme was given, though a repetition of the dose was found necessary in a few cases in which there had been a recurrence of the symptoms. In none of these, however, so far as observed or reported, has there been any widespread manifestation of the disease, but only a recurrence of a few isolated local lesions. In a still smaller number of cases the disease has proved so refractory as to require a second injection before the disappearance of the symptoms.

Several have observed that the spirochætæ disappear within twenty-four to forty-eight hours after the injection of the remedy. The Wassermann reaction usually disappears within from eight to forty days, in accordance with the severity of the infection.

In parasyphilitic complaints, such as tabes, paralysis, pupillary rigor, and similar troubles, there seems room to hope for improvement save in very old cases and in those where the tissues have been too greatly damaged.

Since the editorial article on this remedy, which appeared in our last issue (page 425), was written Neisser, the great German syphilologist, has published an interesting paper on the subject in the *Berliner klinische Wochenschrift* for August 8th. Dr. Erich Hoffmann has also contributed an article to the *Medizinische Klinik* for August 14th which throws further light on the value of the drug.

Neisser bases his report on 126 clinical observations. He speaks first of arsenophenylglycin, designated by Ehrlich as 418, with which remedy he says he cured syphilitic monkeys, and has produced very good results in men in tabes, leucoplakia, and syphilis in case in which mercury was without any effect. But 606, the hydrochloride of dioxydiamidoarsenobenzol, is far superior to 418. Neisser rightly remarks that final conclusions cannot yet be drawn, as his earliest patients were discharged as cured only about three months ago. He thinks that there is a possibility that the single dose may be increased with advantage. While 418 was akin to the trypanosomata, 606 is a chemical combination having a strong influence upon spirilla and spirochætæ. Neisser says that in nearly all cases in which visible symptoms of syphilis existed these have disappeared in a manner which is absolutely astounding. In such cases 606 is far superior to mercury and iodine. To quote Neisser: "I must admit that I have thought that it would be theoretically nearly impossible that such inflammatory infiltrations would be so quickly absorbed and removed." Exceptions were found in parenchymatous keratitis, where 606 seemed to be without effect; but here it might have been possible that the dose was too small or that the preparation itself was not of uniform strength. Neisser favors intravenous injections, which, when carefully and properly made,

are painless; this cannot be said of the intramuscular or subcutaneous injections. He finally takes up the subject of parasyphilitic diseases. He states that a patient suffering from leucoplakia has remained cured for seven months after an injection with 418, and that he hopes 606 will here also show its superiority. He concludes that all patients with fresh syphilis should be treated immediately with 606.

The dermatologist, Erich Hoffmann, who, if we are not mistaken, has been only lately called from Halle to Bonn, reports six cases. Two patients were benefited, a third showed a recurrence, and in three others severe complications occurred, in two a quite severe (*nicht unbeträchtliche*) disturbance of the action of the heart and in one an embolic central pneumonia with subsequent pleuritis produced through a thrombus in the gluteal muscles from an intramuscular injection. But the most important part of the article is to be found in this sentence: "Furthermore, I have heard that one patient died during the night following an injection of 0.3 gramme in acid solution." To this remark Ehrlich answers in the same journal that the patient in question was a woman, thirty-three years of age, who, in 1906, suffered from luetic apoplexy, and had since then undergone several inunction treatments without success, and in whom there finally developed paresis of both legs, muscular atrophy, tachycardia, etc. This patient, he says, received in the afternoon an injection of 0.4 gramme in neutral emulsion, intramuscularly. She suffered intense pain and received two morphine injections; at 11 p. m. respiration became interrupted, and death occurred at midnight, although artificial respiration had been resorted to. This, Ehrlich concludes, was a case of severe syphilis and not a proper subject for 606 treatment. He refers to his instruction according to which 606 should only be used in syphilitics who have no organic lesions or show no mercurial effects. He again cautions against the indiscriminate use of 606.

PROFESSIONAL SECRECY.

The May number of the *St. Louis Medical Review* contained an article entitled, Shall the Law of Professional Secrecy be Maintained in All Cases? The author, Dr. Kenneth W. Millican, of Fairlee, Vermont, after giving a very able exposition of the relations of the law of the matter to elementary justice, argues with equal ingenuity in favor of compulsory secrecy under all circumstances, even when the physician knows that a patient of his is bent on a course of conduct which is practically sure to bode evil to an innocent person—when, for instance, a man with syphilis is resolved to marry. He remarks that the guarantee of secrecy encourages such a man to submit himself to medical treatment, thus diminishing the probability of his conveying infection, whereas without such guarantee he would avoid treatment and perhaps become more and more dangerous; wherefore it is the province of the physician to warn him of the enormity of his proposed act and endeavor earnestly to dissuade him from it. "For the rest," says Dr. Millican, "it remains for the community to make the knowing conveyance of luetic infection a criminal offense, and thus place a powerful weapon of 'moral suasion' in the hands of the medical profession."

Interesting and instructive as Dr. Millican's article is, the practical portion of it seems to have been written under a misapprehension—the erroneous supposition that a physician is under all circumstances legally forbidden to divulge information obtained from a patient as to that patient's physical condition. This mistaken interpretation of the law has been widely entertained, but it ought to have been in great measure dispelled by a little discussion which we published about a year and a half ago. It turned upon the question of whether or not it was right for a medical man, law or no law, to warn a family of their danger of infection by a syphilitic servant. We maintained, and so did our correspondents, that it was right for him to do so, but we soon learned from Mr. Arthur N. Taylor that we had misconstrued the law. Mr. Taylor is the author of an excellent book entitled *The Law in its Relations to Physicians*, a work which ought to be in the hands of every physician. We here reproduce Mr. Taylor's letter from our issue for April 3, 1909:—

> In your editorial, Professional Secrecy and Professional Duty, published on March 6th, you make the following quotation from *The Law in its Relations to Physicians:* "It seems well settled that this clause (that 'one practising medicine and surgery shall not be permitted to disclose "any information which he acquired in attending a patient in a professional capacity"') in the statutes includes all knowledge gained in the professional intercourse of a physician with his patient, whether obtained from statements made to him by the patient or gained from observing and examining the patient." This quotation, as a statement of law, applies to the right of the physician to disclose information in a court as a witness, and does not apply to such a situation as that referred to in your editorial.
>
> At common law the "privilege" from testifying was recognized between attorney and client only. The statutes of about two thirds of the States have extended this privilege to information obtained by physicians in the treatment of their patients, but by the express terms of these statutes such privilege is from testifying. These statutes would not be so construed as to have an application of the sort now in contemplation.
>
> Disregarding the statute, which has been shown not to

apply, it would seem that if the physician improperly makes statements regarding his patient, the patient would have the right to elect under which of two forms of action he would proceed to prosecute the physician. The election would be, 1st, slander, or, 2nd, breach of the implied contract to treat as confidential and secret all information acquired in attending the patient. In an action for slander, the truth of the words spoken is a defense; therefore the physician would have nothing to fear from that form of action. If the action were brought on the theory of breach of contract, I am of opinion that the plaintiff would be equally unsuccessful, for upon the facts assumed in the editorial I am satisfied that the courts, on the ground of public policy, would decline to admit the existence of an implied contract on the part of the physician not to disclose the girl's physical condition to her employer.

Let us recur briefly to that portion of Dr. Millican's article in which he says that "it remains for the community to make the knowing conveyance of luetic infection a criminal offense, and thus place a powerful weapon of 'moral suasion' in the hands of the medical profession." It might be difficult to prove "knowing conveyance" except on the physician's testimony, and that testimony he would be debarred from giving save with the patient's consent. Knowing that to be the case, the physician would hardly seek to reinforce his "moral suasion" by resorting to the idle threat of giving information in spite of the law.

We are somewhat astonished to learn from the August number of the *American Practitioner and News* that in Kentucky there is as yet no statute "privileging a physician on the witness stand from disclosing confidential communications entrusted to him in a professional way by his patient." We entirely agree with our Louisville contemporary that the Kentucky legislature ought to pass a law "extending to medical confidences a privilege analogous to that already conferred upon legal and clerical communications." And so ought all other States in which there is at present no such statute.

POLIOMYELITIS AND THE ROCKEFELLER INSTITUTE.

We learn that the Rockefeller Institute for Medical Research is desirous of obtaining specimens of the nervous system from fatal cases of epidemic poliomyelitis, to be used for experimental purposes. Portions of the spinal cord, preferably of the lumbar or cervical enlargement, removed as soon after death as possible, are specified, and they should be preserved in plenty of pure glycerin (Squibb's, Merck's, or Kahlbaum's). The specimens may be sent by express, at the expense of the institute, or by mail, addressed to Dr. Simon Flexner, the Rockefeller Institute, Sixty-sixth street and Avenue A, New York. In view of the wide prevalence of the disease at present in the United States and Canada, it is to be hoped that the institute will be furnished with many specimens of the kind desired.

PUERPERAL SEPTIC INFECTION.

At the recent meeting of the American Gynæcological Society there were discussed at length very important and still unsettled questions as to the treatment of puerperal septic disease. While opinions differ in detail, certain general principles seem to be almost universally recognized and practised by the leaders in gynæcological thought throughout the country. The use of the curette, of douches, or of any procedure involving traumatism of the infected uterus was generally condemned as being useless, in that the infection had already passed beyond the confines of the endometrium, and as dangerous, because of the tendency of such procedures to break down the natural barriers, so favoring the dissemination of infective material throughout the parametrial tissues and into the general circulation. Radical measures should, wherever possible, be delayed until the acute stage of the infection is over, when any collection of purulent material may be more definitely outlined and evacuated.

It was the general opinion that under proper hygienic measures, rest, appropriate diet, and so on, enormous pelvic exudates were sometimes absorbed and that apparently destroyed ovaries and tubes would sometimes regain their normal size and resume their function. Meddlesome surgery is here exceedingly dangerous, and the general condition of the patient should be the guide for or against operative interference. Radical surgical measures must, of course, be undertaken to meet certain indications, such as rupture of an infected uterus, general purulent peritonitis, and the like. In such cases the prognosis is most grave and an operation is considered as a forlorn hope. Dr. Vineberg, of New York, offered the suggestion of ligating the pelvic veins to prevent the generalization of infective material, and reported good results from the application of this procedure. Though an advocate of radical measures when indicated, he was at one with the general trend of thought, that it was but very rarely that major surgical intervention was applicable in acute puerperal septic infection, for the greater number of patients would recover under appropriate general treatment, aided by such surgical measures as were indicated by various local manifestations. Dr. Montgomery, of Philadelphia, laid stress upon the necessity for purely expectant treatment in many cases. The indications, he held, were to promote elimination, maintain nutrition, sustain strength, and establish early immunity to

the further development of the microorganisms. In this connection vaccine or serum therapy may be of the greatest value. Localized collections of pus in the ovary, the tubes, or the uterus should be considered as indications for surgical attack, and so should any involvement of the wall of the uterus. An operation should always be conservative, the resistance of the patient being maintained at any cost. The result of this collection of opinions from authoritative sources simply confirms the statement that there is no routine treatment of puerperal septic infection, each case being a law unto itself and requiring the most painstaking study and analysis before any form of treatment is instituted.

News Items.

A Correction.—The address of Dr. J. W. Weinstein, which appeared at the end of his article on Atony of the Stomach, published in the issues for August 20th and 27th, is incorrect, Dr. Weinstein having moved from 61 East 107th Street last May. His present address is 71 East Ninety-sixth Street, New York.

The Washington Heights Hospital.—There is a vacancy in the medical and surgical department of the Washington Heights Hospital Dispensary, 554 West 165th Street, New York. This dispensary is open on Tuesdays, Thursdays, and Saturdays, from 2 to 4 p. m. Application should be made to Dr. L. Neuwelt, 2424 Seventh Avenue.

The One Hundredth Anniversary of the Medical Society of the County of Schenectady, N. Y., will be celebrated on September 27th and 28th, in connection with the annual meeting of the Fourth District Branch of the State Medical Society. Elaborate plans are being made to make this meeting one of the most successful in the history of the local organization.

The Oregon State Medical Association will meet in annual session in Portland, on September 7th, 8th, and 9th, under the presidency of Dr. Edward A. Pierce, of Portland. A splendid programme has been arranged and the meeting promises to be very successful. The entertainment committee of the City and County Medical Society has arranged a splendid programme of entertainments for the visiting members and their friends.

Typhoid Fever on Japanese Battleships.—Over one hundred cases of typhoid fever have been reported on Japanese battleships in the Orient. A report to the United States Public Health and Marine Hospital Service says that the Japanese battleship *Iwami* transferred sixty-three typhoid fever patients to the naval hospital at Yokosuka, and the battleships *Mikasa* and *Suo* arrived at Ominato with more than fifty cases of the same disease.

Society Meetings for the Coming Week:

TUESDAY, *September 6th.*—Buffalo Academy of Medicine (Section in Surgery); Syracuse, N. Y., Academy of Medicine; Hudson County, N. J.; Medical Association (Jersey City); Bridgeport, Conn., Medical Association.

WEDNESDAY, *September 7th.*—Elmira, N. Y., Academy of Medicine.

THURSDAY, *September 8th.*—Blackwell Medical Society of Rochester, N. Y.

Dr. Tyson Retires.—The resignation of Dr. James Tyson, professor of medicine in the medical school of the University of Pennsylvania, went into effect last Wednesday. He announced his intention to retire last Spring. In point of service Dr. Tyson is one of the oldest members of the faculty of the university, and one of its most esteemed teachers. He has stepped down entirely at his own volition, and his loss will be felt keenly by both the faculty and the student body. Dr. Tyson is sixty-nine years of age, and has been connected with the medical department of the university for over forty years.

Personal.—Dr. Abraham L. Wolbarst, of New York, accompanied by Mrs. Wolbarst, sailed for Europe on Tuesday, August 30th, on the *Kronprinz Wilhelm*. Dr. Wolbarst will spend some time in study in Berlin and other medical centres, paying particular attention to the new Ehrlich remedy for syphilis.

Dr. A. Gilbert, professor of therapeutics at the Paris College of Medicine, has been appointed professor of clinical medicine to succeed Dr. Dieulafoy.

The Medical Society of Virginia will hold its forty-first annual meeting in Norfolk, on October 25th, 26th, 27th, and 28th. The committee on programme has issued a preliminary announcement and the official programme will be issued about September 20th. Dr. William S. Harris, of Norfolk, is chairman of the local committee of arrangements, and the Monticello Hotel will be the headquarters of the society. The present officers of the society are: President, Dr. E. F. Brady, of Abingdon; Treasurer, Dr. R. M. Slaughter, of Theological Seminary; Secretary, Dr. Landon B. Edwards of Richmond; chairman of the Executive Committee, Dr. William P. McGuire, of Winchester.

A Merger of Homœopathic Medical Colleges.—The Southwestern Homœopathic Medical College and Hospital, of Louisville Ky., has been consolidated with the Hahnemann Medical College, of Chicago. The headquarters of the enlarged institution will be in Chicago, and the building and grounds of the Louisville college will be sold. The members of the faculty of the Southwestern Homœopathic College will be retained on the faculty of the merged schools, each giving a course of lectures on some particular subject, which will necessitate only occasional trips to Chicago. Among the members of the faculty are: Dr. George S. Coon, dean, Dr. J. T. Bryan, Dr. F. C. Askenstedt, Dr. J. H Baldwin, Dr. G. O. Erni, and Dr. C. O. Neff.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Department of Health for the following statement of new cases and deaths reported for the two weeks ending August 27, 1910:

	August 20th		August 27th	
	Cases.	Deaths.	Cases.	Deaths.
Tuberculosis pulmonalis	677	170	518	153
Diphtheria and croup	192	17	225	23
Measles	81	5	75	6
Scarlet fever	86	1	74	1
Smallpox	..	..	..	..
Varicella	19	..	13	..
Typhoid fever	129	12	118	15
Whooping cough	16	9	33	9
Cerebrospinal meningitis	..	3	3	2
Total	1,200	217	1,059	209

A Bequest to the New York Academy of Medicine.—The will of Mrs. Margaret E. Gray, who died two weeks ago, provides a bequest of $50,000 to the New York Academy of Medicine, to establish the Landon Carter Gray Memorial Fund, in memory of her husband, who was a well known neurologist at the time of his death ten years ago. Mrs. Gray directs that the income be used from time to time to purchase books for the academy library, and requires that all books so purchased shall have inserted a book plate which she had designed for the purpose and left in a safe deposit box. She directs that if her estate should not be sufficient to pay all bequests that this fund be set aside first. The will also leaves $5,000 to Dr. William B. Pritchard, at whose home Mrs. Gray lived much of the time after her husband's death, and $3,000 to Dr. John J. McPhee.

The International Congress of Anatomists.—The second quinquennial congress of anatomists was held in Brussels on August 7th to 11th, and was largely attended by anatomists from all parts of the world. Among those present were Professors Waldeyer and von Bardeleben from Germany, Nicolas and Laguesse from France, Minot and Huntingdon from America, Romiti from Italy, Van der Stricht from Belgium, and Arthur Thomson and Paterson from England. The programme included about fifty papers on subjects relating principally to histology and embryology. An important step taken by the conference was the appointment of an international committee to draw up an international uniform nomenclature for embryology, on the lines of the Basle anatomical nomenclature for general anatomy. Dr. F. P. Mall, professor of anatomy at Johns Hopkins University, Baltimore, was made secretary of this committee.

The International League Against Epilepsy will meet in annual session in Berlin on October 4th and 7th, in the lecture hall of Dr. Ziehen's Psychiatric Clinic, under the presidency of Professor A. Tamburini, of Rome. The programme of the meeting will consist mainly of the reports from international committees in the different countries with reference to the prevalence of epilepsy, the number of existing institutions for the care of epileptics, etc. Communications will be received from Dr. Veith, of Berlin, upon epilepsy and crime, and from Dr. Muskins, of Amsterdam, upon the pathophysiology of epilepsy.

A Campaign Against the Public Drinking Cup.—The *Cup-Campaigner* is the name of a little pamphlet published at intervals in New York by persons who "are striving to banish that most prolific medium for spreading disease—the public drinking cup." The second number of this publication is dated August, 1910, and consists of twelve pages. It contains reports of the rulings of health officers in relation to the public drinking cup, the growth of public sentiment against its use, and other developments of the crusade. Laws have been passed in seven States enabling the State Boards of Health to prohibit the use of public drinking cups in every schoolhouse, railroad train and station in the State. These States are Wisconsin, Michigan, Kansas, Missouri, Oklahoma, Massachusetts, and Iowa. Its use has also been prohibited in every schoolhouse in California and in the State Capitol at Harrisburg, Pa. Forty State Boards of Health have decided that the public drinking cup should be abolished, and twelve of these boards expect to take action shortly. Thirteen other boards need authority from their State legislatures for such action.

Osteopathic Physicians Not Permitted to Sign Burial Certificates.—A decision was handed down on Thursday, August 25th, by Justice Putnam, of the Supreme Court, in Brooklyn, that osteopathic physicians should not be permitted to sign certificates assigning a cause of death. Section 163A of the Sanitary Code of the City of New York provides that osteopathic physicians have a right to be registered as physicians with the Department of Health, and to give certificates as to the cause of death; but the section as amended takes away from them the last privilege. Dr. Charles F. Bandel, a prominent osteopath of Brooklyn, complained against the amended section in the Brooklyn Supreme Court, through his counsel. A demurrer was filed by the State and city. Justice Putnam, in rendering a decision, said in part:

"While the State has wisely allowed the practice of osteopathy, it does not, therefore, follow, that it holds out any one without practice in surgery, or experience in prescribing drugs, as fully qualified to certify to the cause of death. Granted that the theoretical education of the osteopath is of a standard equal to that of a doctor of medicine, after he enters his profession his practice is restricted so that it does not appear that he can make tests by the examination of blood and tissues, by which alone many diseases can be certainly detected."

Gifts and Bequests to Charity.—By the will of Mrs. Harriet Coles, widow of Mr. John B. Coles, who died in Glen Cove, N. Y., on August 6th, the American Female Guardian Society will receive $10,000, to be added to the home endowment fund, and will also receive two-thirds of the residue of the estate after the payment of various personal legacies. It is thought that the residuary will amount to several hundred thousand dollars. The will also contains a bequest of $7,500 to the Presbyterian Hospital, of New York, for the endowment of a bed in perpetuity in memory of two sisters of Mrs. Coles.

Through the will of Mr. Andrew T. Dotger, late of South Orange, N. J., the Tuskegee Institute will receive the residue of an estate valued at about $1,000,000, the amount being estimated at over $600,000. Other institutions mentioned in the will are the Orange Memorial Hospital, the Orange Orphans' Home, and the German Hospital, of Philadelphia.

Nearly $500,000 is bequeathed to Jewish charities by the will of Mr. Max Bamberger, of Philadelphia, who died in Germany, on August 25th. Among the bequests included in the will are the following: Jewish Hospital Association, $10,000; Jewish Foster Home and Orphan Asylum, $5,000; Orphans' Guardians' Society, $5,000; Jewish Hospital for Consumptives, Denver, $5,000; Mount Sinai Hospital, $5,000; Jewish Maternity Hospital, $5,000; Hebrew Educational Society, $5,000; Hebrew Orphans' Home, $5,000; National Farm School, $5,000; United Hebrew Charities, $5,000; University of Pennsylvania, $5,000; Keneseth Israel Congregation, for memorial window for his wife, Mrs. Sarah Bamberger, $5,000. The remainder of the estate, amounting to about $400,000, is to be used for the erection and maintenance of a Jewish children's seaside home in Atlantic City, to be known as the Max Bamberger Seashore Home.

Establishments Licensed for the Propagation and Sale of Viruses, Serums, Toxines, and Analogous Products.—The following table contains a list of the establishments holding licenses issued by the Treasury Department in accordance with the act of Congress approved July 1, 1902, entitled "An act to regulate the sale of viruses, serums, toxines, and analogous products in the District of Columbia, to regulate interstate traffic in said articles, and for other purposes." The number of the license of each firm is also given, together with the names of the several products for which licenses have been granted.

No. of license.	Establishment.	Products.
1	Parke, Davis & Co., Detroit, Mich.	Antidiphtheric serum, antitetanic serum, antigonococcic serum, antistreptococcic serum, antitubercle serum, tuberculins, bacterial vaccines, erysipelas and prodigiosus toxins (Coley), and vaccine virus.
2	H. K. Mulford Co., Philadelphia, Pa.	Antidiphtheric serum, antitetanic serum, antistreptococcic serum, antipneumonic serum, antigonococcic serum, antidysenteric serum, antimeningococcic serum, tuberculins, bacterial vaccines, and vaccine virus.
3	Dr. H. M. Alexander & Co., Marietta, Pa.	Antidiphtheric serum, antirabic virus, vaccine virus, and tuberculins.
5	Fluid Vaccine Co., Milwaukee, Wis.	Vaccine virus.
8	The Cutter Laboratory, Berkeley, Cal.	Antidiphtheric serum, antistreptococcic serum, tuberculin, bacterial vaccines, and vaccine virus.
9	Frederick Stearns & Co., Detroit, Mich.	Antidiphtheric serum, streptolytic serum, and pneumolytic serum.
11	Pasteur Institute of Paris, Paris, France	Antidiphtheric serum, antistreptococcic serum, antiplague serum, antimeningococcic serum, and serum antivenimeux.
12	Chemische Fabrik auf Actien (vorm. E. Schering), Berlin, Germany.	Antidiphtheric serum and antitetanic serum.
14	Health Department of the City of New York.	Antidiphtheric serum and antitetanic serum.
15	Dr. W. R. Hubbert Serum Laboratory, Detroit, Mich.	Antidiphtheric serum.
16	National Vaccine and Antitoxin Institute, Washington, D. C.	Antidiphtheric serum, antigonococcic vaccine, vaccine virus, and normal horse serum.
17	Lederle Antitoxine Laboratories, New York City.	Antidiphtheric serum, antitetanic serum, antistreptococcic serum, suspension of lactic acid bacilli, and vaccine virus.
18	Burroughs, Wellcome & Co., London, England.	Antidiphtheric serum, antigonococcic serum, antistreptococcic serum, antistaphylococcic serum, antityphoid serum, antistreptococcic vaccine, antistaphylococcic vaccine, antigonococcic vaccine, and antityphoid vaccine.
19	Memorial Institute for Infectious Diseases, Chicago, Ill.	Antidiphtheric serum.
21	Swiss Serum and Vaccine Institute, Berne, Switzerland.	Antidiphtheric serum, antidysenteric serum, antipneumococcic serum, antimeningococcic serum, antiplague serum, antistreptococcic serum, anticholera vaccine, antiplague vaccine, antityphoid vaccine, and tuberculins.
22	Institut Bacteriologique de Lyon, Lyons, France.	Antidiphtheric serum and normal goat serum.
23	Bacterio-Therapeutic Laboratory, Asheville, N. C.	Tuberculins.
24	Farbwerke, vormals Meister, Lucius & Brüning, Hoechst-on-Main, Germany.	Antidiphtheric serum, antistreptococcic serum, antidysenteric serum, antitetanic serum, antimeningococcic serum, and tuberculins.
25	Tuberculin Society of St. Petersburg, St. Petersburg, Russia.	Tuberculinum purum.
26	Institut de Vaccine Animale, Paris, France.	Vaccine virus.
27	Institut Pasteur de Lille, Lille, France.	Serum antivenimeux.
28	Bacteriologisches Institut Lingner, Dresden, Germany.	Pyocyanase.
29	The Behringwerk, Marburg, Germany.	Antitetanic serum and tuberculin.
30	Dr. G. H. Sherman, Detroit, Mich.	Bacterial vaccines.
31	E. Merck, Darmstadt, Germany.	Antidiphtheric serum, normal horse serum (dried), normal horse serum, antimeningococcic serum, antipneumonic serum, antistreptococcic serum.
32	Kalle & Co., Biebrich, Germany.	Tuberculin (Rosenbach).

Vital Statistics of New York.—During the week ending August 20, 1910, the deaths from all causes reported to the Department of Health of the City of New York numbered 1,342, corresponding to an annual death rate of 14.86 in a thousand of population, as compared with a rate of 14.64 for the corresponding week in 1909. The annual death rate for the week in each of the five boroughs was as follows: Manhattan, 13.94; the Bronx, 15.51; Brooklyn, 15.09; Queens, 18.40; Richmond, 23.69. There were 119 stillbirths. The deaths of children under five years of age numbered 520; 396 under one year of age; 72 between one and two years of age, and 52 between two and five years of age. The deaths from diarrhœal diseases under five years of age numbered 246; over five years of age, 255. There were 12 deaths from suicide, 5 from homicide, 76 due to accidents, and one death from sunstroke. Two thousand four hundred and eleven births and 570 marriages were reported during the week.

Red Cross Christmas Seals.—Arrangements for the sale of Red Cross Christmas stamps for 1910 have been announced by the National Association for the Study and Prevention of Tuberculosis and the American Red Cross Society. The stamps this year will be designated as Red Cross Seals, and will be placed on the back of letters instead of on the front. They will be issued by the American Red Cross Society, as in former years, but this organization will work in cooperation with the National Association for the Study and Prevention of Tuberculosis, which will share in the proceeds of the sale. The National Conference of Tuberculosis Secretaries, through its president, Mr. John A. Kingsbury, of New York, has issued an appeal to all State and local antituberculosis associations to unite with the national association and the Red Cross Society in the sale of Christmas seals, and every effort will be made to discourage the use of local stamps and to encourage the use of the national seal. It is expected that over four hundred and thirty antituberculosis associations and hundreds of Red Cross societies in every State of the Union will unite in the sale of Christmas seals.

The Health of Philadelphia.—During the week ending July 30, 1910, the following cases of and deaths from transmissible diseases were reported to the Department of Health of Philadelphia: Typhoid fever, 29 cases, 4 deaths; scarlet fever, 12 cases, 1 death; puerperal fever, 0 cases, 2 deaths; erysipelas, 4 cases, 0 deaths; chickenpox, 4 cases, 0 deaths; diphtheria, 50 cases, 6 deaths; measles, 40 cases, 6 deaths; whooping cough, 61 cases, 19 deaths; pulmonary tuberculosis, 99 cases, 53 deaths; pneumonia, 17 cases, 20 deaths; mumps, 4 cases, 0 deaths; trachoma, 1 case, 0 deaths, infantile paralysis, 15 cases, 0 deaths. There were 13 deaths from tuberculosis other than that of the lungs, 1 death from dysentery, 2 deaths from cholera morbus, and 162 deaths from diarrhœal diseases under two years of age. There were 43 stillbirths, 23 males, and 20 females. The deaths of children under five years of age numbered 274, 198 under one year of age, 45 between one and two years of age, and 31 between two and five years of age. The deaths from all causes numbered 611, in an estimated population of 1,500,595, corresponding to an annual death rate of 19.87 in a thousand of population.

The Health of Chicago.—During the week ending August 20, 1910, the following new cases of and deaths from transmissible diseases were reported to the Department of Health of Chicago: Typhoid fever, 78 cases, 7 deaths; measles, 26 cases, 2 deaths; smallpox, 0 cases, 0 deaths; whooping cough, 58 cases, 5 deaths; scarlet fever, 69 cases, 2 deaths; diphtheria, 80 cases, 11 deaths; chickenpox, 3 cases, 0 deaths; tuberculosis, 107 cases, 74 deaths; pneumonia, 13 cases, 37 deaths. Two cases of cerebrospinal fever, one case of contagious diseases of minor importance, and three cases of diarrhœal diseases were also reported, making a total of 440 cases reported, as compared with 425 for the preceding week. The deaths under two years of age from diarrhœal diseases numbered 136. There were two deaths from sunstroke and 28 from congenital defects and accidents. The total deaths of children under five years of age numbered 234, of whom 166 were under one year of age. The total deaths from all causes, exclusive of stillbirths, numbered 630, corresponding to an annual death rate of 14.4 in a thousand of population, as compared with a death rate of 13.6 for the preceding week and 15.2 for the corresponding week in 1909.

Pith of Current Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL.

August 25, 1910.

1. A Report of the Scoliosis Department of the Children's Hospital, Boston, By JAMES WARREN SEVER.
2. An Historical Notice of the Operation of Cæsarean Section from the First Operation to the Middle of the Eighteenth Century, By CHARLES GREENE CUMSTON.
3. Lactic Acid Bacteria; What They Are and What They Are Supposed to Do, By ARTHUR I. KENDALL.
4. Fracture of the Lower Epiphysis of the Tibia, with a Report of a Case, By ARCHER O'REILLY.
5. The Hygienic and Dietetic Treatment of Delicate Children by the Class Method, By WILLIAM R. P. EMERSON.

1. **Scoliosis.**—Sever makes the report of the scoliosis department of the Children's Hospital of Boston. He says that so far there have been treated 571 patients. The total number of visits was 26,329, giving an average daily attendance of 46.07. There were 130 boys and 441 girls. This great difference between boys and girls is due to the probable fact that boys do not come to the clinic for treatment until the curves become severe, or until complications arise, while in girls the effects of scoliosis upon the figures are perceptible much earlier and treatment is sought to remedy conditions which in boys pass unnoticed. Statistics of clinics in various institutions show the same difference between boys and girls, whereas records from examinations of large numbers of school children show about equal occurrence of scoliosis in both sexes. A short leg either on one side or the other, except in rare cases, does not seem to play any definite part in the development of scoliosis of any one type. Out of 177 cases of total functional scoliosis, there were thirty-seven patients with a short leg, the difference in length being about equally distributed on each side, and apparently affecting the development of the curve in no way. The x ray plays a great part in making a diagnosis of the curve, and there are found to exist in a large number of cases anatomical deficiencies or variations of the vertebral column hitherto unsuspected.

3. **Lactic Acid Therapy.**—Kendall summarizes the effects of lactic acid therapy as follows: Objectionable proteolytic activity, resulting in the absorption by the host of aromatic substances derived from protein decomposition by the action of proteolytic bacteria, may take place in the intestinal tract. These aromatic compounds may be formed in the small or large intestines by the facultative or obligate proteolytic organisms. An excess of protein in the diet of the host, or any factor causing stasis or impaired absorption of protein, appears to be the direct cause of this condition. The result is an unusual amount of available food which stimulated the development of these proteolytic intestinal organisms. The addition to the diet of easily fermentable carbohydrate, together with the restriction of the protein, is of material assistance in reducing the output of these putrefactive products in many instances. The beneficial action of the carbohydrate is a twofold one: First, the character of the metabolism of the facultative organisms tends to change

from the putrefactive to the fermentative type, eliminating from the urine the putrefactive products referable to their activity; and, secondly, the lactic acid bacilli, either those given by mouth or those normally present in the intestinal canal, or both, proliferate rapidly, forming considerable amounts of lactic acid from this carbohydrate and inhibiting the further development of the obligate proteolytic organisms by rendering the medium in which they are growing unsuitable for continued development. The proteolytic bacteria may be producing their harmful effects either in the small or large intestine; in the former case, the introduction of organisms of the Bulgarian type may reasonably be expected to be of benefit, since we have seen that they tend to localize themselves in the small intestine. If, however, the proteolytic process is of large intestinal origin, the normal lactic acid bacilli of the acidophilus type are indicated. If there is reason to suspect that these normal intestinal lactic acid bacilli are enfeebled in their action, or absent, it will be necessary to feed fresh cultures by mouth, or introduce them per rectum. While the primary object of introducing lactic acid bacilli is to inhibit the objectionable activity of proteolytic organisms, it is possible, and. indeed, experiments seem to indicate, that in addition to the formation of lactic acid, other products associated with their development may be formed which also act beneficially. The nature of these products, and the character of their beneficial action, however, is not definitely known.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

August 27, 1910.

1. Recent Progress in the Serodiagnosis of Syphilis, By Howard Fox.
2. Pellagra, By J. D. Long.
3. The Farm; The Next Point of Attack in Sanitary Progress, By Allen W. Freeman.
4. Certain Legal Aspects of Domestic Quarantine, By Henry Bixby Hemenway.
5. Variation of Doses Dependent on the Method of Administration, By Robert A. Hatcher.
6. Study of Some Cases of Acute Otitis Media, Seen in Consultation, By Hiram Woods.
7. The Close Relation of the Dentist to the Physician, By B. E. Bush.
8. Symptomatology and Diagnosis of Meningitis of Otitic Origin, By Edward Bradford Dench.
9. The Indication for Surgical Interference for the Relief of Otitic Meningitis, By F. MacCuen Smith.
10. The Operative Treatment of Otitic Meningitis, By Holger Mygind.
11. A Possible Differential Sign between Cardiac Dilatation and Pericarditis with Effusion, By W. J. Calvert.
12. Neuralgias and Functional Disturbances Arising from Infections in and about the Tonsil, By Frank C. Todd.
13. Poisoning from Bites of Copperhead Snakes, By Prentis Willson.
14. Endonasal Method of Removal of Hypophyseal Tumors with Report of Two Successful Cases, By Oskar Hirsch.
15. Carcinoma of the Spleen and Stomach with Unusual Blood Picture, By A. M. Shoemaker.
16. The Rôle of Surgery in Preventive Medicine, By Miles F. Porter.
17. A Cutaneous Anaphylactic Reaction as a Contraindication to the Administration of Antitoxine, By W. L. Moss.
18. Large Accidental Vulvar Hæmatoma at Term, By Colin G. Robertson.

1. **Serum Diagnosis of Syphilis.**—Fox gives a summary of the recent progress in the serum diagnosis of syphilis. He remarks that the various precipitation tests for the diagnosis of syphilis are too unreliable to be of much practical value. The Schürmann color reaction has been extensively tried and found to be worthless. The favorable results that have been given for the subcutaneous reaction are at least encouraging, as the performance of the test seems to be simple. Excellent results have been reported by Richard Weil of his cobra venom test. They are, however, somewhat lessened in value by the fact that very considerable experience is required to perform the reaction. Further investigations are required to show whether the leucodiagnosis, the antitryptic index, or the meiostagmin reaction can be used as diagnostic aids in syphilis. The results obtained with the Much-Holzmann reaction appear to be of no value. The artificial antigens of Sachs and Rondoni, and of Schürmann for the Wassermann reaction have not succeeded in replacing the use of organ extracts. The use of barium sulphate suggested by Wechselmann to remove the disturbing complementoids from the patient's serum has apparently given a greater proportion of positive reactions than those obtained by the original Wassermann method. The use of urine in place of serum for the Wassermann reaction is not to be recommended. No single modification has as yet entirely replaced the original Wassermann method. The modifications of Hecht and of Stern have apparently given good results abroad, while the Noguchi test has received almost universal recognition in America. The methods of Bauer and of Tschernogubow (second test) appear to be of much less value. To the list of nonsyphilitic diseases which at times give a positive Wassermann reaction, must apparently be added lupus erythematosus acutus. It has also been found that many cases give a positive reaction following ether narcosis. The diagnostic value of a positive reaction is generally recognized. There is no general agreement as yet regarding the value of the test as a guide for treatment. From recent serological investigations it would appear that syphilis plays a very important rôle in the ætiology of aortic insufficiency. Syphilis is probably of more importance in the causation of nerve deafness than has been previously supposed. There is apparently little or no relation between syphilis and ozæna. A new field seems to have been opened by the Wassermann reaction for the discussion of the problem of the inheritance of syphilis and of the interpretation of the laws of Colles and Profeta. In the field of pathological anatomical diagnosis the Wassermann reaction seems to be of considerable value. Serological examinations have shown that the percentage of syphilitic infections in prostitutes is extremely high.

2. **Pellagra.** — Long reports twenty-five cases with pellagra, in which the amœbiasis was treated by enemata of quinine bisulphate in normal salt solution. After a preliminary purge, the patient was put on a diet of milk, toast, rice, and starchy foods. To aid the pancreas, pancreatin was administered in capsules coated with phenylsalicylate, in order that the hydrochloric acid of the stomach could not act on and destroy the pancreatin. To assist the pancreatin and neutralize the acidity present in the intestine, sodium bicarbonate was given,

also in capsules coated with phenylsalicylate. To prevent accumulations of food and resulting fermentations, small doses of salts were given often enough to cause one or two bowel movements each day, not counting the results of the enema as a movement. The deposits were treated by inunctions of mercury and the internal administration of potassium iodide, both pushed to the therapeutic limit. Rest in bed was ordered till the acute symptoms had subsided. The results of this treatment were: Three patients died; of these, two died of chronic amœbic dysentery, the pellagra lesions having practically disappeared; the other, just prior to death, was having from eighteen to twenty stools each day, and the pellagra lesions had improved, until the week before death, when secondary infections began in the lesions, and they became purulent. Twelve patients improved in varying degrees, both mentally and physically. Since these were insane negroes and no cooperation could be received from the patients themselves, it was surprising that they improved at all. Six others also were improved, and, in accordance with information received, they are continuing to improve. Four recovered, and all symptoms of pellagra had disappeared, except a slight increase in the patellar reflexes.

8, 9, 10. **Otitic Meningitis.**—Dench, MacCuen, and Mygind urge prompt surgical interferences in otitic meningitis. The earlier we can make the diagnosis, the better will be the prognosis. If the symptoms of meningitis are recognized early, the surgeon by prompt interference may be able to prevent the disease from passing beyond the serous stage, and, in some cases, in which an actual infection of the subdural space has occurred, may be able promptly to remove the source of infection and to effect a cure. The longer the duration of the case, however, the more grave the prognosis. The cure of otitic meningitis depends on its early recognition.

12. **Results of Tonsil Infection.**—Todd states that pain and soreness in the neck in the region of the tonsils usually arise from diseased tonsils. Neuralgias in the region of the tonsil, ear, side of head, neck, nose, teeth, gums, or antrum of Highmore, may be and frequently are caused by diseased tonsils. Disturbances of function through pressure on or inflammation of nerves may manifest itself in hoarseness, in loss of voice, cough, difficult deglutition, or entrance of food into trachea, with regurgitation, or in defects in hearing, dyspepsia, and disturbed heart action. Such diseased tonsils may not be and usually are not large or acutely inflamed. They must be carefully examined by the surgeon who should pull them into view with a dull hook, determine whether the crypts contain detritus, whether the tonsils are sore to such manipulation, bleed easily, or otherwise give evidence of being diseased. Such tonsils should be carefully and completely removed. Relief of secondary infections usually follows immediately on removal, but, sometimes, slowly, if neuritis or secondary glandular involvement is present. In certain cases paralysis may be permanent.

13. **Snake Poisoning.**—Willson observes that the general treatment in snake poisoning is simple but important. The copperhead venom produces a very marked fall in blood pressure and exerts a selective depressing effect on the respiratory centre. The low blood pressure should be treated by the administration of adrenalin by intravenous injection, if the condition promises to be at all serious. Strychnine is probably as likely to be useful as any other stimulant, especially in those cases where there is a tendency toward respiratory depression. Caffeine and camphorated oil would seem to be indicated on theoretical grounds, in bad cases, as in young children. The recumbent posture with the head low and external heat should be used. Bandaging the extremities, abdominal compression by a tight binder, and artificial respiration may be tried in very serious cases, but such cases will be very rare except in young children. Locally the ideal treatment consists in the application of a series of ligatures between the wound and the heart, tied tightly enough to impede the return flow of blood and lymph but not to cut off the circulation and obliterate the pulse. This procedure makes the absorption of venom slower and therefore less likely to overpower the resistance of the body to the poisoning. When first seen in many cases the extremity will be ligated tightly enough to cut off the circulation completely. These ligatures should be promptly relaxed, as gangrene has occurred under these circumstances. The best interest of the patients will be best conserved by no interference with the wound beyond the application of an antiseptic occlusive dressing. In cases in which a young child has been bitten by a large snake and comes under treatment at once, dissection of the wound and the use of crystals of potassium permanganate under every aseptic precaution would be indicated. When the case is seen after the lapse of some time, with the venom in all probability well diffused through the tissues, this treatment will not do any good even in such cases, and certainly not enough to compensate for the increased danger of ordinary septic infection.

MEDICAL RECORD.

August 27, 1910.

1. The Postoperative History of Eighteen Cases of Magnetic Foreign Bodies Removed from the Eye by the Haab or Giant Magnet,
By Charles Stedman Bull.
2. The Importance of Early Recognition of Cancer,
By Isaac Levin.
3. On the Adaptation of the Human Saliva to Diet,
By Lafayette B. Mendel, Jessamine Chapman, and Alice F. Blood.
4. The Chemistry of the Urine in Pulmonary Tuberculosis. With Observations on the Blood,
By Roscoe W. King.
5. The Simple Extraction of Cataract,
By Juan Santos Fernandez.
6. The Car Barn Bandits.—A Brief Study in Degeneracy,
By G. Frank Lydston.
7. Report of a Case of Sarcoma of the Adrenal Gland,
By J. J. Hoffman, and J. Allen Jackson.
8. Anchoring the Kidney for Dislocation or Displacement,
By Edward N. Liell.
9. Two Cases of Actinomycosis,
By Howard Jones.

1. **Removal of Magnetic Foreign Bodies from the Eye by the Haab or Giant Magnet.**—Bull reports eighteen such cases in which the postoperative history could be followed up. The particle of iron or steel was successfully located by the x ray apparatus in every case, and a skiagram made. The foreign body was successfully extracted by the Haab magnet in every case but one. The extraction occurred through the original wound in seven cases,

and through another channel in ten cases. The foreign body was located in the vitreous in eight cases, and in the fundus in ten cases. An iridectomy was done at the time of extraction in seven cases. A cataract subsequently developed in eight cases. Phthisis bulbi resulted in six cases, and sympathetic uveitis in eight cases, and an enucleation was necessitated in ten cases. The vision was permanently lost at the time of the accident in five cases. There was immediate useful vision after the removal of the foreign body in two cases. Permanent useful vision was not gained in any case. From a careful examination of these eighteen cases, and of a large number of cases already published by various authors, he emphasizes the following points: 1. The foreign body should be located and an attempt made for its extraction as soon as possible after the accident, in order to lessen the dangers of infection. 2. When the wound of entrance is in the anterior segment of the eye, and the foreign body has been located in the vitreous or fundus, no attempt should be made to draw it forward by the Haab magnet through the wound of entrance. It seems far wiser to make an incision through the sclera at the nearest point to the location of the foreign body, and extract it by means of the small magnet. 3. These eyes are all suffering from the shock of the original accident, and the severity of the second shock of applying the giant magnet, and forcibly drawing the foreign body through delicate tissues already seriously injured has not been properly appreciated. 4. These eyes are all in a dangerous condition, and the prognosis must always be unfavorable, with the great danger of the development of sympathetic uveitis. 5. If infection has already begun, the eye should be enucleated at once. 6. While the prognosis in these cases is always very grave, it is better when the foreign body is lodged in the vitreous than when it is lodged in the retina or ciliary body. 7. Great care should be exercised in the application of the giant magnet, for more injury may be done by the fragment of iron or steel being drawn through the tissues by the magnet than was caused by the original accident. 8. If the attempted extraction fails, it is better to enucleate the eye at once. 9. Even after a successful extraction, useful vision will be permanently lost in the majority of the cases, and enucleation will be necessary in order to save the fellow eye. The danger of sympathetic inflammation is ever present, and a general insidious uveitis may develop months and even years afterward and extend to the fellow eye.

2. **Early Recognition of Cancer.**—Levin gives a brief review of the methods most commonly used in making the distinctive diagnosis of cancer: 1. The microscopical and chemical examination of the secretions. This method is of great value in cancer of the stomach, kidney, bladder, etc. 2. Electric instrumental inspection. This method may be used in cancer of the nose, larynx, œsophagus, rectum, and bladder. 3. Exploratory operation. This method is of greatest importance in cancer of the stomach. Whenever a patient past middle age complains somewhat suddenly of indefinite gastric uneasiness, pain, and vomiting, followed by progressive loss of weight and energy and associated with anæmia, the possibility of cancer of the stomach should be recognized, and in a suspected case, if no improvement takes place in a few weeks at most, an exploratory operation is more than justified. The danger of such an operation, with the present surgical technique, is minimal. The patient is out of bed in a very few days, and if cancer is found, it can be radically removed. The same is true of cancer of the gallbladder, intestines, appendix, etc. 4. Microscopical examination of tissue. The most important diagnostic method consists in the removal of a small piece of the growth and its microscopical examination. This method represents the means for an absolutely certain diagnosis in nearly every case where it may be employed. The method is available for the following conditions: 1. Cancer of the skin, where ulcerations, warts, or other similar growths appear suddenly on the scalp, the face, the lips, or on the surface of the skin generally, in a person past middle age. 2. Carcinoma of the tongue, where a papillary outgrowth on the tongue, an indurated nodule, a fissure, or an ulcer of the same organ, calls for a speedy removal of the same tissue for examination. The growth may be radically removed at this early stage, but it very soon invades the adjacent tissue and the lymphatic glands of the neck and then becomes the most intractable of the malignant tumors. The same is true for similar formations occurring on the surface of the mucous membrane of the mouth, palate, pharynx, and tonsils. Cancer of the parotid or submaxillary glands cannot be distinguished in the early stages from syphilis, tuberculosis, or even a purulent infection of the organ. If an unaccountable swelling occurs in these glands, an exploratory incision and the removal of a small portion of the tumor for microscopical examination is very advisable, since these tumors may be radically removed when small, but they grow very rapidly and soon become inoperable. The same holds true for the cancer of the testicle. 3. Cancer of the larynx in its initial stage resembles so closely an ordinary papilloma that no correct diagnosis can be made on simple laryngoscopic inspection. If a person past middle age is suffering from gradually increasing hoarseness, with or without pain on swallowing, a laryngoscopic examination should be made immediately, and if any new growth is found, it should be removed for microscopical examination. 4. Cancer of the breast is very easy to recognize if fully developed, but in the initial stage it may appear as a small tumor in the body of the breast without any retraction of the nipple, which is so characteristic of the disease, and may resemble in all respects a benign adenoma or an inflammatory condition of the gland. Any tumor appearing in the breast of a woman of forty years of age or more, or a tumor which has remained small for years and then begins to grow rapidly, is very probably a malignant growth, though it may not show any of the characteristic features of the disease. 5. The uterus presents the most important class of malignant growths, where an early recognition and an early radical operation give excellent results, and where at the same time not only the laity but the profession fail to make an early diagnosis. Any woman who complains of uterine bleeding after the climacterium, or even before the climacterium, but at irregu-

lar intervals, or after exertion, or a woman past the climacterium, who notices a sudden onset of leucorrhœa with a thin, watery discharge streaked with blood and profuse from the start, should be examined with a speculum. If the cervix is found slightly enlarged and somewhat nodular in character, the tissue appears hard, the mucous membrane paler than normal, or an ulceration is noticed, then a small wedge shaped piece of tissue should be removed from the cervix and examined microscopically. If no abnormality is found on the cervix, the uterus should be curetted and the tissue fragments examined microscopically.

BRITISH MEDICAL JOURNAL

August 13, 1910.

1. Section in State Medicine of the Seventy-eighth Annual Meeting of the British Medical Association.
2. A Lecture on the Value and Misuse of Spectacles in the Treatment of Headache, Migraine, and other Functional Troubles of the Eyes, By Robert W. Doyne.
3. Refraction of the Eye in School Children, By E. Arthur Dorrell.

2. Spectacles in the Treatment of Headache.—Doyne remarks that the troubles that refractive and muscle balance errors produce may be divided into those that are caused by peripheral conditions and those by central conditions, the former often bringing about and merging themselves with the latter. The former include: Pain at the back of the eyes, pain at the brow, tender and bruised feeling of the eye, heaviness of the lids, pain at the inner canthi, pain at the nape of the neck, and morning discomfort. The latter include headache, sickness, sleepiness, polyuria, migraine. Of the former, the first four are due to fatigue of the ciliary muscle and are chiefly associated with hypermetropic errors, but may occur with anatomically normal eyes, and in any case one may be sure that the ciliary muscle is involved when the patient complains of pain at the back of the eyes. That it is a very definite localization of pain may be gathered from the fact that it is an expression used by all, and is no mere phrase that might have been adopted as expressive of ocular discomfort. The bruised and tender feeling of the eyeballs is manifest on pressing with the fingers on the eyes through the upper lid, and those who have felt it know very well what it means. The heaviness of the lids which helps to produce the sleepiness of the second category is due to the failure of the levator palpebræ. It is constantly in action, like the ciliary muscle, and receives innervation from the same nerve. The pain occasionally felt in the corners of the eyes is due to fatigue of the convergent muscles, and when it occurs is more often associated with exophoria. Pain at the nape of the neck is very often, perhaps always, associated with disturbance of muscle balance such as occurs in heterophoria, a term which includes exophoria, esophoria, hyperphoria, and hypophoria, signifying that the eyes in a state of rest are either divergent, convergent, or one looking up and the other down, the terms "hyperphoria" or "hypophoria" being interchangeable according to which eye you regard as being in the normal position. As to the treatment he remarks that muscle balance errors must sometimes be corrected, but it is well to hold off doing so if we can. It so often leads to the demand for constant glasses, especially in cases of hyperphoria, but we may often correct with advantage half the amount that may exist of weakness of external recti. The much more uncommon condition of esophoria illustrates, sometimes more than other forms of heterophoria, the advantage of a prism. Cases of hyperphoria that require glasses are among those who should wear them constantly. As regards headache and migraine, he thinks we cannot with any confidence undertake to give our patient any relief, except sometimes in cases of simple hypermetropia when the centre for accommodation only is involved, unless the glasses are worn constantly. The commonest error that provokes the symptoms is anisometropia, and in that condition, while one eye has bad vision, the other often has supernormal vision.

LANCET

August 13, 1910.

1. Fibroma, Sarcoma, and Fibromyoma of the Abdominal Wall, By C. B. Lockwood.
2. Acute Laryngeal Dyspnœa in Children, By Harold Barwell.
3. An Aid to Diagnosis in Malignant Disease, By Elsie M. Royle.
4. On Occluding and Subocclusding Ligatures, By Victor Bonney.
5. A Case of Congenital Spastic Hypertrophy of the Pylorus, By Frederic Barker and Leonard Mackey.
6. Note on a Case of Artificial Pneumothorax, By Dr. W. Holmboe.
7. A Dermoid Cyst of the Testicle Associated with a New Growth, By J. F. Barrington
8. A Case of Extrauterine Pregnancy Occurring twice in the Same Person, By W. W. Stainthorpe.
9. The Effect of Radium on the Healthy Tissue Cell, By G. Percival Mills.
10. Public Health Administration in Hamburg, By W. E. Home.

1. Tumors of the Abdominal Wall.—Lockwood says that the treatment of fibroma, sarcoma, and fibromyoma of the abdominal wall depends upon their pathological characters. An encapsulated tumor may be removed from its capsule, especially when we know that the tumor consists of fibrous tissue. But if there is no capsule and if the tumor is growing along one of the abdominal muscles then the removal becomes a matter of greater difficulty. The ideal method of removing a sarcoma of muscle would be to take away the whole muscle from beginning to end, but this is not possible in the case of abdominal muscles. Nevertheless, the wider the margin we give these sarcomata the better.

3. Diagnosis in Malignant Diseases.—Royle observes that in cases of cancer the uric acid is usually higher than is found in healthy cases under similar conditions; the output of phosphates in the urine is in the majority of cases of cancer decreased when compared with healthy individuals; the ratio of phosphates to uric acid is almost invariably reduced in malignant disease below that found in health, any ratio below 4 being suggestive, especially if it remains low on several occasions, and any ratio below 3 is almost diagnostic of malignant disease or a blood disease, unless, indeed, further work shall prove that the same is found in other conditions.

9. Effect of Radium upon the Healthy Tissue Cell.—Mills experimented with mice to find out the comparative effects of radium on normal and

malignant tissue. He used the liver as it is conveniently situated and found that there is a transient change in the liver cells somewhat resembling "cloudy swelling." There is an early inflammatory reaction lasting a few days, and a late inflammatory reaction coming on in about fourteen days and lasting much longer.

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT.

August 2, 1910.

1. Trade Accidents which Happen to the Apparently Healthy on Account of Latent Changes in the Internal Organs, By Baeumler.
2. Atypical Forms and Complications of the Arteriosclerotic and Angiospastic Dysbasia, By Curschmann.
3. Treatment of Little's Disease, By Biesalski.
4. The Transplantation of Broad Flaps of the Gastric Mucous Membrane, By Debernardi.
5. Short Report of 109 Cases of Syphilis Treated with 606, By Glueck.
6. The Treatment of Anthrax, By Koelsch.
7. Contribution to the Treatment of Variola, By Dreyer.
8. Ascaridiasis and Its Successful Treatment with Oleum Chenopodii Anthelminthici, By Gockel.
9. The Cigarette Drain, By Krecke.
10. A New Apparatus for Puncture of the Pleura, By Weitz.
11. A Stool for Help in the Bath, By von Bibra.
12. The Number of the Medically Treated and the Statistics of the Cause of Death, By Fischer.

2. Atypical Forms and Complications of the Arteriosclerotic and Angiospastic Dysbasia.—Curschmann enumerates 1, the intermittent interference with the psychic functions, such as transitory amnesia, transient delirium, etc.; 2, intermittent interference with the sensory motor nervous apparatus, such as transitory hemipareses, Déjerine's spinal form, and the peripheral symptom complex of Charcot-Erb; 3, sensory types of intermittent interference, such as vessel spasms, angina pectoris, abdominal spasms and spasms of the limbs; 4, intermittent interference with orientation, with equilibrium, or in the form of dizziness.

3. Little's Disease.—Biesalski urges that the radical operation should not be the primary resource in cases of this disease, but that all other remedies should be tried before the posterior roots of the spinal cord are resected.

5. 109 Cases of Syphilis Treated with 606.—Glueck gives a very interesting résumé of his experience with this preparation. His patients were both male and female, varying in age from twelve to seventy years. The rapidity of healing is particularly noted. The size of the dose seems to have a special influence of the shortness of the healing process in the tertiary form; in six cases given 0.3 gramme, the symptoms disappeared in from twenty-one to forty-seven days, six given 0.4 gramme recovered in from six to twenty-one days, and two that were given 0.5 gramme were discharged in five days. In a case of syphilitic arthritis complicated with periostitis of the tibia and gummata of the skin not a trace of the trouble was left at the end of six days. Wassermann's reaction was observed in only twenty cases. In five the reaction was negative in from thirty-five to forty days without repetition of the dose; in the remaining fifteen, in whom the test was made in from eight to twenty-one days after the injection, the reaction was positive. Almost every case with secondary symptoms was examined for spirochætæ, which usually disappeared in from twenty-four to forty-eight hours; in one case of sclerosis none could be found at the end of sixteen hours and in two others on the fourth day. Thus far he has observed no recurrences, but the time of observation was too short for him to determine the final results. In only two cases were the results not altogether satisfactory, and the patients required a second dose.

DUBLIN JOURNAL OF MEDICAL SCIENCES.

August, 1910.

1. Pathological Report of the Rotunda Hospital for the Year Ending October 31, 1909. By Robert J. Rowlette.
2. Dysentery or Dysenteric Diarrhœa in West African Prisons, By St. George Gray.
3. Temperature Curve in Pulmonary Tuberculosis, By Madeleine S. Baker.
4. Why Has Smallpox Declined in Prevalence and Fatality? By Sir John Moore.

2. Dysentery or Dysenteric Diarrhœa.—Gray speaks of his experience as physician in charge of the Calabar Prison in West Africa and later of the prison in Warri, Central Africa. He says that the African prisoners are generally recruited from the lowest and most degraded types of savages, and they resent the white man's interference with their customs—very often abominably filthy—and when they fall ill they refuse to take his medicine, and occasionally make up their minds to die, which they do in spite of all or any treatment that the medical officer may carry out or attempt to carry out. If "dysentery" gets into a prison there will surely be many cases, and probably more than one death, before the medical officer can stamp it out—if he ever does so. The symptoms of the disease which are fairly constant are frequent and scanty stools passed with great straining, often consisting of nothing more than a drachm or two of mucus—generally, but not always, streaked with blood—and occasionally dirty gray sloughs smelling abominably offensive. The patient complains of griping pains in the umbilical region, as if his bowels were being twisted or "tied with knots." There is usually a moderate rise of temperature at first, but later it becomes subnormal. The patient becomes emaciated and exhausted from the constant straining, and when death occurs it is from exhaustion, the body being literally worn out. The tongue is coated with a dirty fur or stripped in patches, and the teeth are covered with sordes. The urine is scanty, and hæmorrhoids are not uncommon. Amœbæ (*Entamœba histolytica?*) have been found in all cases microscopically examined, but the finding of protozoa in the stools is no evidence that they are the cause of the disease, as amœbæ may be found in patients not suffering from dysentery. The author has had such good results with magnesium sulphate that he has not had occasion to try any other drug. Ipecacuanha has not been a success with prisoners, as when given in powder form it was promptly vomited, and the prisoners would not swallow pills, and it may be questioned whether the ipecacuanha treatment has any advantage over irrigation and gentle saline purgation. Opium appears to be positively harmful. It soothes pain and gives temporary relief, but the patient does not get better. The diet must be in accordance with the native cus-

toms which vary in the different tribes. Arrowroot pap made with water is good when the natives can be persuaded to take it; but in the majority of cases they do well on yams, plantains, garri, or other native foods that would give the physician occasion for the greatest anxiety if the patients were Europeans.

4. Why Has Smallpox Declined?—Sir John Moore proves that smallpox has declined in prevalence and fatality, and that to an extent out of all proportion to a like change in the case of every other member of the class of the acute infections. The history of smallpox in the nineteenth century points strongly and clearly to vaccination as being the great modifying agency which changed the disease from one of childhood to one of adult life. Childhood was rendered immune to smallpox by vaccination in infancy. But in the years of rapid growth, from the first dentition onward to puberty, probably in consequence of the rapid development of body cells, immunity grows less and less, so that revaccination becomes an imperative necessity if so powerful an infection as that of smallpox is to be kept at bay. Again, the striking contrast presented by Great Britain and Ireland to the German Empire in regard to the isolation treatment of smallpox in hospitals offers eloquent testimony to the efficacy of compulsory revaccination as a lifelong preventive of the disease in most cases. Lastly, we have the spectacle of pestilence stricken Russia, in which vaccination is practically nonexistent; of Austria, in which voluntary vaccination has advanced by leaps and bounds since 1891, bringing to her people release from the same pestilence; and of Germany, in which vaccination and revaccination before the age of twelve years are compulsory, with the result that her home population is almost entirely free from the disease.

EDINBURGH MEDICAL JOURNAL

August, 1910.

1. On Local Anæsthesia, with Special Reference to Vein Anæsthesia, By August Bier.
2. The Causes and Prevention of Blindness, By George Mackay.
3. Some Practical Points in the Life History of Uterine Fibromyomata, By F. W. N. Haultain.

1. Local Anæsthesia.—Bier, of Berlin, delivered the Cameron Lecture before the University of Edinburgh, on July 20, 1910. His subject was local anæsthesia. He mentions Schleich's infiltration method of weak solutions of cocaine, and the substitutes for cocaine, novocaine, alypine, beta eucaine, and tropacocaine; he then speaks of the adrenal preparations combined with cocaine; and finally takes up his vein anæsthesia, which method he fully describes. He has treated so far 244 cases, with the aid of vein anæsthesia, of which only five were failures.

3. Life History of Uterine Fibromyomata.—Haultain remarks that fibromyomata of the uterus are extremely common; only a small proportion give rise to morbid symptoms; they tend to cause sterility; they are particularly liable to degeneracy, though seldom of a malignant type from a clinical aspect; degeneration is specially prone to occur at the menopause; after the menopause atrophy and quiescence is the usual sequence; when symptoms occur, removal is the proper treatment; when small and innocuous, no surgical treatment is called for.

GLASGOW MEDICAL JOURNAL.

August, 1910.

1. Latent and Chronic Infections with the Typhoid Bacillus, By Carl H. Browning and Walter Gilmour.
2. The Embyrological Significance of Certain Lesions of the Prepuce and Neighborhood, By G. H. Edington.
3. Case of Congenital Occlusion of the Duodenum (Accompanying a Deficiency of the Hind Gut) with a Note on the Ætiology, By Arnold H. Gray

1. Latent and Chronic Infections with the Typhoid Bacillus.—Browning and Gilmour, in speaking of the treatment of carriers of typhoid bacilli, say: The administration of cholagogues, especially dried bile and bile salts, for months, has proved ineffective; antiseptics, urotropin, sodium benzoate, and sodium phosphate, have also failed. *A priori*, the use of antiseptics is not hopeful, since such bodies have in general as great an affinity for the tissues as for the typhoid bacilli, so that though they may act powerfully *in vitro* on a pure culture of organisms, or in organisms in a nonalbuminous fluid like urine, their action is abolished in the presence of protein substances, hence their ineffectiveness when the organisms are in the tissues. The administration of lactic acid bacilli and the exposure of the gallbladder to the x rays have been tried without permanent effect. Of surgical treatment they say that removal of gallstones has cured some patients, and in others excision of the gallbladder has effected a cure. The severity of the latter operation, and the fact that the typhoid bacilli are not always confined to the gallbladder but may have infected the bile ducts within the liver, exclude this measure from general use. Vaccination with a killed culture of the patient's own bacilli has had a favorable effect in only a proportion of cases, but merits further trial. In their case a mixed vaccine of the organisms found in the discharge from the gallbladder was employed for several months; but without any marked effect. On the other hand, typhoid inoculation is a most successful preventive measure, and deserves to be more widely practised, especially in the case of those coming into constant contact with enteric fever patients, since among them typhoid infections are well known to run a very fatal course. Whether preventive inoculation will lessen or prevent the occurrence of bacillus excreters among those who do not become clinically affected with enteric fever is a question which deserves attention.

Proceedings of Societies.

MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Meeting of March 21, 1910.

The President, Dr. Reynold Webb Wilcox, in the Chair.

A Simple Device for Obtaining Crayons of Carbonic Acid Ice.—This was presented by Dr. Sinclair Tousey.

Dr. William S. Gottheil said we could do more with carbon dioxide ice crayons than with a great many more elaborate and expensive appliances, and

the field of their usefulness was constantly being extended. This was the only caustic over which we had absolute control, and he had found it effective in epithelioma, rodent ulcer, xanthoma of the eyelid, and nævi of all kinds. In fact, it was of far more service in dermal affections than the x ray. It was not, however, adapted to the treatment of warts and other papillomata, because in this class of cases it was necessary to destroy the whole thickness of the skin.

Some Open Questions in Tuberculosis.—Dr. Thomas E. Satterthwaite, after briefly reviewing our knowledge of the disease from the time of Galen, more than two thousand years ago, down to the present time, said we still had much to learn about the tubercle bacillus of Koch. That it was sometimes harmless when inoculated was certain. Also its relation to the inception of the disease was not very clear. It had seldom been found in the tuberculous meningitis of infants, and, furthermore, even in advanced tuberculous lesions, with destruction of tissue, it might not be detected by the most expert pathologist. At the present time the tubercle bacilli which appeared to be most dangerous to mankind were the human and the bovine; the bovine species having exceptionally pathogenic properties, though how frequently the latter induced human tuberculosis was a somewhat uncertain matter. Various animals, birds, and even fish, had tubercle bacilli, but those differed from the human variety in morphology, staining reactions, and cultural and pathological characteristics. Each appeared to be tenacious of its own peculiarities; yet under protracted cultivation, we were told, they seemed gradually to approach each other morphologically, and it was even possible that they might be bred so as to be more or less akin to the human bacilli in virulent qualities. Thus far, no satisfactory proof had been adduced that these nonhuman types were actual sources of tuberculosis, while, on the other hand, there was a so called pseudobacillus, obtained from fæces, human sputum, and other sources, whose relationship to the bacillus of human tuberculosis had not been determined. It was said to differ from the genuine variety mainly in its property of resisting decolorization by mineral acids, and for this reason was classed as an acid fast bacillus. According to James, a variety of the pseudobacillus known as the timothy grass bacillus produced reactions on inoculation resembling those caused by tuberculin, and this statement suggested new opportunities in the field of research.

As to the frequency of the disease, we had at our command only approximate estimates. The reason of this was that we had to depend mainly on post mortem data; the ocular evidence yielded by lesions which had healed and which might have been due either to tuberculosis or to ordinary abscesses, syphilis, or even parasites. From the investigations of Beitzke, it appeared certain that more than half of the adult population of Berlin had had tuberculosis at one time or another, and it was probable that the actual ratio was very much higher. From this, two definite facts could be made out: 1. Most adults of advanced age had at one time or other had an attack of tuberculosis. 2. In congested localities the disease was more common than in rural populations. Italians were unusually prone to it. While it was very frequent among our negroes and in them was apt to run a rapidly fatal course, in the dark races of Africa it was said to be almost unknown. It was also very prevalent and fatal among our Indians, and it would be interesting to know whether the same was true of Indians living apart from the customs and influences of the white man. Having given statistics of the frequency of tuberculosis in patients at the Babies' Hospital, New York, the speaker said that these figures might be adduced as evidence that the disease was acquired by personal contact; indeed, in these instances it was stated that in nearly half the cases of tuberculosis brought into this hospital in recent years the infants had been in close contact with tuberculous persons in their homes. As a rule, tuberculosis did not appear so frequently in the early as in the later periods of adult life, and it was clear that the incidence of the disease bore a somewhat constant ratio to the age of the individual. On the other hand, the period of the greatest mortality among adults was properly set at the third decade, or between the ages of twenty and thirty. In infants this occurred in the first year of life.

The actual proof of contagion was not always easy. It was mostly presumptive and derived from analogical reasoning. While it was true that the lower animals could as a rule be successfully inoculated with the bacillary poison, the human species seldom contracted the disease in this way, from direct contact with tuberculous material. Thus far it had been difficult to actually demonstrate that infection came from the ingestion of contaminated milk or meat, though in some quarters it was inferred that milk was the greatest source of danger of all ingested matter. Within the past two years, however, Professor Woodhead, of the British Royal Tuberculosis Commission, had estimated that less than seven per cent. of all deaths from tuberculosis were due to bovine infection, and it had been urged by Whitla that tuberculosis was rife in parts of the world where cows' milk was not used at all, while children were known to have consumed the milk of tuberculous cows for years without contracting the disease. Neither had we direct proof, of course, that the disease came from sputum; yet experiments on the lower animals showed that infection from these two sources was possible. It was maintained that the infection might be due to the passing of the bacilli to the fœtus through the placenta, and Baumgarten was of the opinion that this form of inborn tuberculosis was becoming more and more evident. The skin might possibly be the medium through which the bacillus entered, and numerous cases had been reported to sustain this view. Flies might carry and implant the germ, but this method of infection was probably quite rare. Inasmuch as the bacillus soon died when exposed to light and air, it was not likely to be conveyed by dry sputum, but fresh tuberculous sputum contained the bacilli in vast quantities. Hence the danger, which was intensified when the patient coughed in one's face. This, at least, was the theory of the contagionists.

The rapidity of infection seemed to be intensified by the admixture of such organisms as the staphy-

lococcus and other pus producing bacteria commonly met with in suppurating cavities; and on this point there was much unanimity of opinion. It was important to remember that the tubercle bacillus did not destroy tissue unless pus producing organisms were affiliated with it, and hence the bacillus alone was not so deadly as it was formerly believed to be. According to recent statistics in Vienna, tuberculosis prevailed in the proportion of 10 to 10,000 population in the better parts of the city, but of 67 to 10,000 in the poorer localities. Where families lived in one or two rooms the mortality was double that where four rooms or more were occupied. These figures, however, did not necessarily sustain the doctrine of direct contagion, since they were applicable also to deficient nutrition as furnishing the base for ordinary aerial contagion. Whether alcoholism favored the development and extension of tuberculosis was a mooted point. Alcohol was a food for some persons; for others, a poison. The pure contagionists had thrown over the doctrine of heredity, or at all events minimized its influence. Others, however, had held that, while persons did not inherit the disease, they might inherit a physical condition of the chest which favored tuberculosis by inhibiting proper respiratory efforts. Others, more numerous, held that the contagion was inoperative without a suitable soil for the bacillus to grow in. Still others contended that there was in some individuals a normal resistance which prevented infection, and that a subnormal resistance power invited the disease. Certainly a predisposition might be handed down, and the family history had its influence in the determination of the disease; while susceptibility or lack of resistance was also a factor.

At the present time the general hospitals in New York were not allowed to take open cases of tuberculosis, which were referred by the authorities to special hospitals or sanatoria, but might admit a limited number of closed cases, while walking cases were referred to dispensaries and tuberculosis clinics. The profession would wait with great interest to see whether this method of combating the disease would prove satisfactory. Having referred to the vast efforts, and large expenditure of money now being made in all civilized countries to check tuberculosis, Dr. Satterthwaite said that statistics might be brought forward to support the contention of optimists that the disease could be eradicated. Such statistics must, however, be received with caution, and until we could distinguish the post mortem findings in syphilis, traumatisms, and nontuberculous inflammatory conditions, including the results of parasitic affections, we should not get the whole truth. While the general government, States, municipalities, and individuals might establish sanatoria, it was evident that only a small proportion of the millions of tuberculous in the country could ever be treated in such institutions. When tuberculosis was classed, as it had been, with such contagious diseases as smallpox and the exanthemata, great harm had been done. It had been recently announced that the City Council of Baltimore had inaugurated a system by which nurses were given authority to enter houses and enforce the health department's regulation for preventing the spread of tuberculosis. The result of this would be that a number of tuberculous patients could not be found, for obvious reasons, and then there would naturally be a demand for more of the public money to hunt them down. It was the very bad cases which were thus disturbed, more than the others, and yet these were the ones that needed absolute rest and rest in bed. Procedures on the part of public authorities to alarm and needlessly distress these wretched sufferers should be discountenanced by the reputable practitioner. Many of the problems of tuberculosis were complex, and this fact should be impressed upon the laity, who at present were disposed to take a leading part in the crusade against the disease without an adequate knowledge of the questions involved.

The Crux of the Tuberculosis Problem.—Dr. Lawrence F. Flick, of Philadelphia, said that the crux of the tuberculosis problem was prevention of implantation. Without the tubercle bacillus there could be no tuberculosis, and without implantation there could be no new cases. There were many predisposing causes which facilitated implantation and growth, but they were secondary, and in their greatest potency could not produce the disease. On the other hand, tubercle bacilli, when scattered about freely enough, might produce implantation without any of the predisposing causes. There were, no doubt, individuals who could resist the development of tuberculosis to a fatal termination under any amount of exposure, but in such cases implantation probably took place and died out. As there was only one essential cause of tuberculosis, so there was only one positive prevention of it. Prevention of implantation was positive, while improvement of sanitary, sociological, and financial conditions was problematical. When these conditions were bad, they predisposed to tuberculosis, and their improvement might contribute to prevention, but could not in itself prevent the disease. These facts should be borne in mind in selecting measures when financial resources were limited. Incarceration and destruction of the tubercle bacillus at the time and place of exit from a host, without contamination of person, place, or thing, constituted the essential element of prevention. This could be accomplished in consumptives by depositing the broken down tissue in a paper box or cup while it was being held close to the mouth, wiping the mouth with a paper napkin, folding up the napkin and placing it in a paper bag, and finally burning the sputum box, napkin, and bag. Such a practice rendered a tuberculous subject noncontagious and implantation from him impossible, and the prevention of tuberculosis in its last analysis consisted of making every person suffering from tuberculosis in a contagious stage follow this practice. Every such case should be placed in the custody of some one who would see that it was properly carried out.

It was probable that all ambulant persons with tuberculosis could be made noncontagious outside of their homes by such education and training as could be given them in the dispensary or in the office. Nearly all of them, however, gradually produced a contagious environment in their homes, and as the disease advanced, unless under supervision, one of high potency. It was probable that the average duration of tuberculosis in human beings,

from implantation to death, was at least ten years. During the greater part of this time it was noncontagious or only intermittently contagious, and the average period of contagiousness of sufficient potency to give an implantation was probably about six months. It was probable that for every fatal case, on an average, five persons had been exposed to what might be called a competent contagious environment; and yet it was a fact that out of five opportunities for implantation, less than one implantation of sufficient vitality to terminate fatally took place. The history of the progress of tuberculosis throughout the civilized world forced us to the conclusion that for preventive purposes all our efforts should be concentrated on making the terminal stage of the disease noncontagious. Whenever and wherever there had been an effort to remove the consumptive in the advanced stage of the disease from the family circle and put him under control, there had been a reduction in the death rate from tuberculosis commensurate with the amount of work done, and in no place where isolation was not practised had there been a very perceptible reduction in such death rate. As to the method of isolating advanced consumptives, the most sensible way would be to admit them into separate departments of general hospitals; and this could be done without dangers to any one and at relatively small expense for alterations. In Pennsylvania there were enough vacant hospital beds every day in the year to isolate all such cases in the Commonwealth, and this was probably more or less true of other States.

Immunity in Tuberculosis Considered from both the Experimental and Clinical Standpoints.—Dr. F. M. Pottenger, of Los Angeles, Cal., said that in all infections the cure consisted in the production of a specific immunity against the causative germ or its toxines or both, and this was the aim of therapy. In the therapy of tuberculosis we were only now beginning to realize that the establishment of immunity to the tubercle bacilli and their toxines was the thing for which we were striving. The production of such immunity was surrounded by many difficulties; in fact, it might be doubted whether such a thing as absolute immunity was attainable. Nevertheless, careful clinical observation and animal experimentation demonstrated that we had a much higher degree of immunity in this disease than was apparent at first thought. Careful students of the subject were coming to the conclusion that tuberculosis was a disease which lasted over a period of years, during much of which time it produced no well recognized symptoms, and it was now quite generally believed that childhood was the time when most infections occurred. Recent experiments by Calmette, Hamburger, Römer, and others showed that through the first infection there was developed an immunity which afforded protection against further infection from both the bacilli within the body and those coming from outside sources. Guineapigs, rabbits, sheep, and cattle which had been once infected with tuberculosis presented a resistance to a second infection which could be accounted for only by the presence of a considerable degree of immunity. It was a self evident fact that the greater degree of immunity existing, the more chronic the disease. This was noted in the manner in which tuberculosis destroyed people who had not been previously inoculated with the disease, as compared with the way it affected the inhabitants of Europe and America. It was also noted in children in the early months of life, when compared with children of later years; tuberculosis during the first year of life being nearly always acute, assuming the meningeal or acute miliary form. Regardless of the immunity which children acquired, sooner or later they nearly always became infected with tuberculosis. This early infection, however, was not an altogether unmixed evil, for if it healed it left behind, as was shown by animal experimentation, a considerable degree of immunity; and, even if it did not heal entirely, it still seemed to protect the individual against further infection.

Having referred to the results obtained by various investigators, the speaker said that these experimental facts, when interpreted in accordance with clinical observations, helped us to understand tuberculosis better. In experimental animals there was a wide difference between the primary and secondary inoculations with tubercle bacilli, and it seemed that we were justified in assuming that the primary infection in tuberculosis was a very important one from the standpoint of future resistance to tuberculosis. If this infection was produced by very virulent bacilli or great numbers of bacilli, the patient would be likely to succumb to acute tuberculosis; but if by few bacilli or nonvirulent bacilli, no infection at all might occur, or one which later might result in healing, leaving the individual with a certain amount of immunity. If an infection resulted, but was again prevented from spreading, although not healing, it might yet be able to modify future reinfections, and, in accordance with the results obtained by animal experimentation, prevent them from occurring. It seemed probable that reinoculation from without with ordinary doses of bacilli in an individual already infected, or in one who had a healed lesion, could do no more than produce a chronic form of tuberculosis. Of course, it remained to be determined how long this immunity would last. The question which interested us as clinicians was how to make this immunity, the presence of which was demonstrated by both animal experiment and clinical observation, of greatest value to tuberculous patients. From the facts mentioned it could be seen that the patient who was cured of tuberculosis had an immunity. While we spoke of cure in this disease, however, there was more or less uncertainty about the matter. Clinical results showed that, whereas about seventy-five per cent. of incipient cases, actuated to-day, were apparently cured, only a very small percentage of far advanced cases so resulted.

The problem of curing or immunizing the patient, then, required the employment of treatment at a time when the involvement was still small, the tissues more easily penerated by immunizing bodies, and the danger of the disease's spreading not so great. Our method of treating tuberculosis, while effective, was still far from satisfactory. The disease had a tendency, when the infection was small, to become quiescent, but yet not heal. During recent years the specific or immunizing treatment had

been rapidly gaining friends, because it was now well established that patients treated by the various tubercle bacillus vaccines came nearer to a lasting cure than those treated without them, as was shown by the fact that they did not relapse so frequently. If patients with small lesions, corresponding to the incipient stage of clinical tuberculosis, were treated under the best hygienic conditions and adequate medical supervision, and given the advantage of the intelligent employment of tuberculin, and if the treatment was continued, not for three months, but until the signs in the chest had disappeared or until the best result attainable had been produced, Dr. Pottenger believed we were justified in hoping that more than eighty per cent. could be permanently cured. The average time for treating incipient cases in his practice had been five or six months, and the result of treatment an apparent cure in eighty-seven per cent., with a relapse count of less than ten per cent. The way in which tuberculin acted was unknown, but that it had a specific effect in the production of immunity was accepted. Having referred to the results of animal experimentation with it, he gave the conclusions from his own experience during the past fifteen years with the employment of tuberculin (cautiously, yet with more boldness than most clinicians) in all stages of tuberculosis, and on patients showing all types and all complications of the disease. Among these were the following: That when properly given in the more advanced cases, tuberculin fortified the patient by an increased immunity, so that he was better able to resist reinoculation from the bacilli escaping from the focus of his disease; that tuberculin modified the course of the disease by increasing the patient's immunity, as was shown by the fact that during its administration the disease usually assumed a more chronic course; that further evidence of the specific immunizing action of tuberculin was shown in the fact that such complications as tuberculous laryngitis, genitourinary tuberculosis, fistula in ano, and joint, bone, and gland lesions—in fact, tuberculous lesions wherever found—might be healed by its employment. His long experience had also taught him that it was probably the most difficult remedy which we had to employ. The proper administration of tuberculin knew no regular dose and no set interval, and this agent could not be given to the greatest advantage except by studying the capacity and reactive powers of each patient.

(To be concluded.)

Letters to the Editor.

THE REGULAR ARMY AND THE MILITIA.

NEW YORK, *August 24, 1910.*

To the Editor:

I have read with much interest your editorial note regarding the medical service in the army and the relations of the militia to the regulars in their combined manœuvres. The suggestion which you offer that the militia regiments be broken up and that provisional regiments be formed, including both regulars and militiamen, is an admirable one, but in planning the work for the militia it is always necessary to remember that for the rank and file of the militia the ten days spent in the manœuvres constitute the only vacation which they have.

In view of this fact it is deemed inexpedient by the militia officers, and the regulars for the most part concede that they are correct, to impose such tasks on the militiamen as will make the service odious. If the burdens imposed are too onerous it would be impossible for the militia regiments to secure recruits. Indeed, this is somewhat difficult now, except in the case of a few regiments whose armories furnish the inducements of a club house for the organization.

The principle suggested by your editorial note of bringing the regular and the militia troops into the closest possible contact was carried out quite fully during the recent tour of service at Gettysburg. One or more regular officers were detailed to meet each militia organization on its arrival, escort it to the location assigned it in the camp, and remain with it constantly during its drills and exercises for the ten days it was in camp, rendering all assistance possible.

When the organizations finally left camp this officer made a report to the War Department as to the completeness of its equipment and its efficiency. The militia cavalry, artillery, and infantry camped beside the regular troops of the same branches of the service, and the hospital corps companies of those States in which the organization of the regular army has been followed camped with the regular hospital corps company. In most cases the medical officers attached to these companies messed with the regular medical officers and were thus in close social and professional contact with them.

The Medical Department devoted the forenoons from 9 to 12 to instruction at camp. The hospital corps, regulars and militia, were amalgamated and put through a series of drills by the noncommissioned officers of the regulars. The drills included first aid on the battlefield, men supposedly having been wounded and marked with diagnosis tags to indicate the nature and severity of the wound being sought for, dressed, and carried in by the litter bearers.

The medical officers had two hours' instruction each morning in camp sanitation and in medical administration, such as drawing rations, keeping records of the sick, etc. Each officer was supplied with a military map of the surrounding country, with all elevations and depressions indicated, and with the different kinds of fences, buildings, and crops indicated by the conventional signs, which the officers learned to read. From 11 to 12 each morning a field problem for the afternoon was laid out. At 1:30 the officers assembled, mounted, and went into the country, where the regular hospital corps company set up a regimental aid station, for the inspection of the militia, in a location sheltered from the bullets of a supposed enemy. The following afternoon the militia organizations selected locations and set up their regimental aid stations, which were inspected and criticised by the instructors. The next day the dressing station was set up by the regulars, and on the day following that the militia duplicated this as far as their equipment permitted. They were able in this way to note the deficiencies in their

equipment and to form an idea of what supplies they most needed.

This brief outline of the work done will show the intensely practical and very valuable character of the instruction provided for the Medical Corps in these manœuvres. There are ten of these camps of instruction scattered throughout the United States this summer. The instruction in each camp varies to a certain extent in accordance with the views of the commanding officer, but the general outline given above will apply in most cases.

It seems to be the desire of both the regulars and the militia to reach such a perfect understanding that they would be able to work together in the fullest harmony in case of emergency demanding such action. Medical Officer.

Book Notices.

[*We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.*]

Organic and Functional Nervous Diseases. A Textbook of Neurology. By M. Allen Starr, M. D., LL. D., Sc. D., Professor of Neurology, College of Physicians and Surgeons, Medical Department of Columbia University in the City of New York: Consulting Neurologist to the Presbyterian and St. Vincent's Hospitals and to St. Mary's Free Hospital for Children, etc. Third Edition, Thoroughly Revised, Illustrated with 300 Engravings in the Text and 29 Plates in Colors and Monochrome. New York and Philadelphia: Lea & Febiger, 1909.

Dr. Starr's book on the diseases of the nervous system begins with a section devoted to the structure of the nervous system and a general consideration of the elements of diagnosis of nervous diseases. The first chapter is devoted to the anatomy of the nervous system and contains a discussion of the now generally accepted neurone theory. The second chapter is devoted to the general consideration of the subject of diagnosis and a description of the methods of examination. The third chapter is devoted to the histology of the peripheral nerves and a discussion of the symptoms of disease of these structures. The fourth chapter is given over to a discussion of the diagnosis and localization of spinal cord diseases. The fifth chapter is concerned with the diagnosis and localization of diseases of the brain.

In Part II the discussion of chronic nervous diseases is taken up in detail. This part begins with a section devoted to a discussion of injuries and diseases of the nerves and begins with a chapter on injuries of nerves and neuritis. This is followed by a chapter devoted to injuries of the spinal nerves and special forms of neuritis. The next chapter discusses multiple neuritis in a very satisfactory manner, and this is followed by a chapter devoted to the toxic forms of multiple neuritis, which is also very satisfactory. The next chapter discusses the infectious and toxæmic forms of multiple neuritis, including those forms following diphtheria, influenza, typhoid fever, typhus fever, malarial fever, scarlet fever, measles, whooping cough, smallpox, erysipelas, septichæmia, gonorrhœa, puerperal fever, and leprosy. The next chapter describes beriberi. This chapter is not so full and complete as it should be in view of the large amount of literature recently put out concerning this very interesting form of multiple neuritis. The next chapter is devoted to a consideration of multiple neuritis associated with various other diseases, such as rheumatism, gout, diabetes, tuberculosis, syphilis, and carcinoma.

The second section of this part of the book is devoted to diseases of the spinal cord. First there is a chapter on the spinal bloodvessels, followed by a discussion of anterior poliomyelitis. This is followed by a chapter on amyotrophic lateral sclerosis; after this comes one on the muscular dystrophies; then comes one on syringomyelia; then a chapter on lateral sclerosis; then a chapter on locomotor ataxia; then a chapter on combined sclerosis. The next chapter is devoted to myelitis and myelomalacia. Chapter XXII is devoted to the discussion of injuries of the spinal cord; Chapter XXIII to compression of the spinal cord from various causes; Chapter XXIV to Landry's paralysis; and Chapter XXV to spinal meningitis. Section III is devoted to diseases of the brain in chapters with the following titles: The Cerebral Circulation; Cerebral Hyperæmia and Anæmia; the Cerebral Atrophies of Childhood; Encephalitis; Meningoencephalitis; Abscess of the Brain; Thrombosis of the Venous Sinuses; Bulbar Paralysis; and the Diseases of the Cranial Nerves. Section IV deals with general diseases of the nervous system; multiple sclerosis, syphilis, caisson disease, pachymeningitis and meningeal hæmorrhage, and cerebrospinal fever. Part III deals with the functional nervous diseases, such as neuralgia, migraine, the spasmodic neuroses, including tic and torticollis, tetany, paralysis agitans, epilepsy, neurasthenia and psychasthenia, hysteria, vertigo, and the reflex neuroses. Part IV is devoted to a consideration of the sympathetic nervous system, including symmetrical gangrene, vasomotor and trophic neuroses, and angioneurotic œdema.

The book is well written and presents the facts of neurology in a concise form without redundancy, so that the practitioner who wishes to read up concerning some particular case occurring in his practice does not have to wade through a great number of words in order to get the meat of the discussion. The illustrations are good and the mechanical features of the book are excellent. The fact that the book has passed into its third edition is an indication that the medical profession in general appreciates the pleasant style of the author.

Prescription Writing and Formulary. By John M. Swan, M. D., Associate Professor of Clinical Medicine in the Medico-Chirurgical College of Philadelphia; Instructor in Clinical Pathology and Tropical Medicine, Philadelphia Polyclinic and College for Graduates in Medicine, etc. Containing 1,043 Prescriptions. Philadelphia and London: W. B. Saunders Company, 1910. Pp. 185.

We should imagine that this work might serve a useful purpose in leading young practitioners to pay greater attention to the art of prescription writing and the correct combination of therapeutic agents. The author makes a plea for a more extended use of the drugs official in the *Pharmacopœia*, including, we assume, the *National Formulary*, as he expresses mild dissent against the exploitation of new remedial agents by commercial houses. The first part of the book is taken up with the construction of the

prescription, and this is followed by an explanation of the Latin terms used in prescriptions, with a list of nouns used in the *Pharmacopœia,* accompanied by their genitive endings. It must be regarded as somewhat of a reflection on the preliminary educational requirements of our schools of medicine that the inclusion of such a list should be necessary, but it will be found convenient for refreshing the memory. A list of adjectives with their genitive endings is also given. A brief historical description of the *United States Pharmacopœia* and notes on official preparations make up Chapter III. In Chapter IV, covering about three pages and a half, an explanation is given of the weights and measures in ordinary use. In Chapters V and VI useful suggestions are made regarding the method of finding the dose according to age, with examples of faulty abbreviations and directions to the pharmacist, and notes on incompatibilities. Here the work is marred by examples of deformed spelling, and some of the expressions used are also likely to jar on sensitive ears. If alkalies, why not "iodides"? Not all "alcoholic tinctures and other alcoholic preparations are "incompatible with water and watery solutions." However, these are minor matters.

The formulary proper occupies 122 pages and should prove suggestive and useful in the formulation of prescriptions, but we regret to notice a certain lack of originality in some of them—the ointment formulas, for instance. Petrolatum alone as a base is much inferior to a mixture of petrolatum and hydrous wool fat, and if petrolatum is to be used the white petrolatum should be prescribed as being more generally free from irritating acids and of a far higher degree of purity than the ordinary yellow petrolatum, which is supplied by the pharmacists when petrolatum is ordered without qualification.

The variety of prescriptions contained in the formulary is sufficiently large, but we think that the choice is too limited and not always of the best in some instances. There are better applications for chilblains than the two that physicians are confined to who consult this manual. Of the two applications recommended for corns, one would be sufficient, though in painful conditions the application of a liniment of tincture of iodine and tincture of belladonna, equal parts, might give relief. What is the pharmacist to understand by the second prescription under the heading Morning Sickness, on page 141?

Die Syphilisbehandlung mit dem Ehrlich-Hata'schen Mittel (Dioxydiamidoarsenobenzol). Zusammenstellung der bisherigen Erfahrungen. Von Dr. JOHANNES BRESLER, Oberarzt an der Prov. Heil- und Pflegeanstalt zu Lüben i. Schl. Halle a.S.: Carl Marhold, 1910. Pp. 30.

This is a very timely pamphlet, which gives a general review of Ehrlich's "606." We gladly refer our readers to the perusal of the thirty pages, which are said to contain the papers published on the treatment of syphilis with dioxydiamidoarsenobenzol, up to the beginning of July. The pamphlet seems to have been hurriedly written and the sources of the material are not always clear, *loco citato* being used frequently without any references made on previous pages. A description of the method of preparation and injection is to be found on page 6.

MEDICOLITERARY NOTES

In the August *Success* an amusing two part story, Molly Make Believe, by Eleanor Hallowell Abbott, begins. Early in the tale the invalid hero consults his physician, who apparently travels about in a van, for, during a pause in the conversation, he busies himself making up a prescription "the least bad tasting possible."

* * *

In a recent number of the *Atlantic,* Charles Terry Delaney wrote an article on The Man on the Bridge, in which he charged that officers of the liners were overworked and underpaid. In the August *Atlantic,* Mr. Delaney returns to the charge in a letter. The surgeons on the big ships occupy a somewhat anomalous position. Although paid but eight pounds a month, they are forbidden to accept fees. Acknowledgment of their services, therefore, by wealthy passengers is looked upon as a tip and seems to put the medical officer on a level with the stewards. He is sometimes able to get a few pounds by letting his stateroom during a crowded voyage. These ship surgeons, whose responsibilities are enormous, suffer from the reputation acquired by the low class of men who once monopolized the positions. Champagne is or was free to passengers for whom it was prescribed, and these ornaments to the profession used to connive with the steward to misrepresent the number of bottles prescribed and share with him the money thus realized.

* * *

Dr. Luther H. Gulick writes in the *World's Work* for August, Why 250,000 Children Leave School. The reasons include ill health, physical defects, irregular attendance, and too high a standard of education.

* * *

Dr. Woods Hutchinson prescribes Fiction as a Diet for the mentally starved in the August *Good Housekeeping.* An admirable article, by Ruth Curran, cites from newspapers all over the country a number of ridiculous recipes for cleaning clothes, cooking, etc., and, what is serious, several prescriptions given without warning as to their poisonous or other dangerous qualities. Gasoline with friction is recommended for phtheiriasis capitis, although friction may develop sufficient heat to explode the volatile liquid. A prescription for freckles is copied which commends, without warning as to the necessity for a poison label, a lotion containing ten grains of corrosive sublimate in a six ounce mixture.

* * *

The following story is known to French students of medicine as the production of Dr. J. Claretie: Magendie was once dissecting a live frog in order to demonstrate the nervous system. He paused in his work for a moment and began: "I am sorry, gentlemen—" "Ah!" exclaimed the sympathetic audience, "he is about to say how grieved he is that the frog must suffer." "I am sorry, gentlemen," continues Magendie, "that this frog is not so big as a cow; you could see better." Great sensation on the following day among the antivivisectionists

when the story leaks out; resolutions are passed that the murderous Magendie should be torn to pieces and his body given to the frogs.

* * *

In the apocryphal book of Ecclesiasticus, XXXVIII, 1, we read: Honor a physician . . . for the uses which ye may have of him. In the Vulgate this passage is: *Honora medicum propter necessitatem,* which has lent itself to the facetious rendering: Give the doctor his honorarium, for he needs the money.

* * *

Le médecin est la fourmy reads an old French proverb. This lends a new interpretation to: "Go to the ant, thou sluggard", and implies the necessity for a physical examination to diagnosticate a possible hookworm, diabetes, or other energy destroying agency.

* * *

All languages swarm with proverbs concerning the man of medicine. In India they say Plant not thy tent where there is no temple, school, or physician; the Germans aver *Geistliche reinigen das Gewissen, Aerzte den Leib, Juristen den Beutel,* coupling the doctor with the clergyman in his disregard of money; the French also absolve the physician from mercenary motives: *Un grand médecin ne fait point le pot bouillir,* although some surgeons have other things on the kitchen range besides the humble stew. An old English proverb tells us that the good surgeon must have an eagle's eye, a lion's heart, and a lady's hand.

* * *

Hierocles, not the Platonic philosopher, but a writer of later date, of whom little remains save a few epigrams in Greek, made fun of the physician who carefully adjusts his glasses to examine his fee, but lays them aside to begin the uranalysis.

NEW PUBLICATIONS.

Shuttleworth, G. E., and Potts, W. A.—Mentally Deficient Children. Their Treatment and Training. Third Edition. Philadelphia: P. Blakiston's Son & Co., 1910. Pp. xviii-236.

The Harvey Lectures. Delivered under the Auspices of the Harvey Society of New York. 1908-1909. By Professor A. Calmette, Professor W. G. MacCallum, Professor Graham Lusk, Professor W. Falta, Dr. John F. Anderson, Dr. M. J. Rosenau, Professor A. B. Macallum, Professor J. B. Leathes, Professor Philip Hanson Hiss, Jr., and Dr. C. B. Davenport. Philadelphia: J. B. Lippincott Co., 1910. Pp. 290.

Muthu, C.—Pulmonary Tuberculosis and Sanatorium Treatment. A Record of Ten Years' Observation and Work in Open Air Sanatoria. New York: William Wood & Co., 1910. Pp. lx-201. (Price, $2.)

Gray, Albert A.—The Ear and Its Diseases. With Stereoscope, and 123 Illustrations, of which 37 are Stereoscopic. New York: William Wood & Co., 1910. Pp. xii-386. (Price, $4.25.)

Saalfeld, Edmund.—Lectures on Cosmetic Treatment. A Manual for Practitioners. Translated by J. F. Halls Daly, M. A., M. D., B. Sc., F. R. C. S. I., Surgeon for and Lecturer on Diseases of the Skin, West London Hospital and College, etc. New York: Paul B. Hoeber, 1910. Pp. xv-186. (Price, $1.75.)

Wingfield, H. E.—An Introduction to the Study of Hypnotism. Experimental and Therapeutic. New York: William Wood & Co., 1910. Pp. viii-175. (Price, $2.)

Milne, Robert.—A Plea for the Home Treatment and Prevention of Scarlet Fever. New York: William Wood & Co., 1910. Pp. 80. (Price, $1.)

Knox, Ernest.—Aids to Microscopic Diagnosis. Bacterial and Parasitic Diseases. New York: William Wood & Co., 1910. Pp. viii-156. (Price, $1.)

Cofer, Leland E.—Maritime Quarantine. Public Health Bulletin No. 34. Prepared by Direction of the Surgeon General. Washington: Government Printing Office, 1910. Pp. 64.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of and deaths from cholera, plague, smallpox, and yellow fever were reported to the surgeon general of the United States Public Health and Marine Hospital Service for the week ending August 26, 1910:

Cholera—Foreign.

Place.	Date.	Cases.	Deaths.
Austria—Galicia—Padwoloczyska	June 20	1	1
Colombo—Ceylon	July 3-9	1	
India—Bombay	July 13-19		8
India—Calcutta	June 26-July 2		29
India—Negapatam	June 12-18		4
Italy—Puglia, province	Aug. 20	70	60
Netherlands—Rotterdam	July 23-29	1	
Persia—Ardabil	July 1-6	20	6
Russia—General	July 23-29	7,999	3,384
Russia—Odessa	July 24-30	120	49
Russia—Moscow	July 17-23	3	2

Yellow Fever—Foreign.

Brazil—Manaos	July 17-23	5	5
Brazil—Para	July 24-30	7	4

Plague—Foreign.

Brazil—Bahia	July 9-15	1	1
Brazil—Rio de Janeiro	June 5	1	
Chile—Mejillones	Apr. 27		Present
China—Amoy	July 10-16		4
China—Hongkong	July 3-9	1	1
India—Bombay	July 13-19		50
India—Calcutta	June 26-July 2		31
India—Kurrachi	July 10-16	7	6
India—Rangoon	July 3-9		31
Russia—Odessa	July 23-Aug. 7	6	3
Russia—St. Petersburg	May 6-28	3	3
Tunis—Tunis	June 30	5	3

Smallpox—United States.

District of Columbia	Aug. 7-13	8	
Illinois—Henry County	July 1-31	3	
Illinois—Jo Daviess County	July 1-31	4	
Illinois—Kendall County	July 1-31	1	
Illinois—Knox County	July 1-31	1	
Illinois—Madison County	July 1-31	5	
Illinois—Peoria County	July 1-31	1	
Illinois—Richland County	July 1-31	6	
Illinois—Rock Island County	July 1-31	3	
Louisiana—New Orleans	Aug. 4-10	8	

Smallpox—Foreign.

Argentina—Rosario	June 1-30	1	1
Barbados	Aug. 16	1	
Canada—Halifax	Aug. 1-13	3	
Canada—Toronto	July 11-Aug. 6	9	
Chile—Valparaiso	July 19-23	60	
Egypt—General	June 3-17	124	25
India—Bombay	July 13-19		3
India—Kurrachee	July 12-16	2	
Italy—General	July 24-31	7	
Italy—Naples	July 24-31	19	
Japan—Formosa	July 10-16	1	1
France—Paris	July 24-30	1	
Germany—General	July 24-30	1	
Korea—Seoul	June 5-July 2	1	3
Malta	July 9-23	12	1
Mexico—Aguascalientes	July 31-Aug. 6		1
Mexico—Mexico	July 10-23		3
Mexico—San Luis Potosi	July 24-30	1	1
Persia—Teheran	May 1-31		28
Portugal—Lisbon	July 24-30	56	
Russia—Libau	July 11-17	6	1
Russia—Moscow	July 19-23	5	4
Russia—Odessa	July 9-16	1	2
Russia—Riga	July 24-30	22	
Russia—St. Petersburg	July 3-16	81	13
Russia—Warsaw	May 15-21		10
Spain—Barcelona	July 25-Aug. 1		1
Spain—Seville	July 25-31		2
Spain—Vigo	July 24-30		1
Uruguay—San Jose	July 7		Present
Zanzibar—Zanzibar	July 1-14		11

Public Health and Marine Hospital Service:

Official list of changes in the stations and duties of commissioned and other officers in the United States Public Health and Marine Hospital Service for the fourteen days ending August 24, 1910:

ANDERSON, JOHN F., Passed Assistant Surgeon. Granted one day's leave of absence from August 20, 1910, under paragraph 189, Service Regulations.

CLEAVES, F. H., Acting Assistant Surgeon. Granted fourteen days' leave of absence from August 7, 1910.

COFER, L. E., Assistant Surgeon General. Granted six days' leave of absence from August 22, 1910.

DUFFY, BENEDICT J., Assistant Surgeon. Directed to report to the medical officer in command at Buffalo, N. Y., for duty August 12, 1910.

FOSTER, A. D., Passed Assistant Surgeon. Directed to proceed to New Orleans, La., and report to the medical officer in command for duty and assignment to quarters, August 15, 1910.

FOX, CARROLL, Passed Assistant Surgeon. Granted ten days' leave of absence en route to station.

GLEASON, C. M., Acting Assistant Surgeon. Granted fourteen days' leave of absence from August 15, 1910.

GUITERAS, G. M., Surgeon. Leave of absence for four days from August 9, 1910, amended to read three days from August 9, 1910.

GWYN, M. K., Passed Assistant Surgeon. Granted ten days' leave of absence from August 28, 1910.

HERTY, F. J., Pharmacist. Granted five days' leave of absence from August 16, 1910, under paragraph 210, Service Regulations.

KRULISH, EMIL, Assistant Surgeon. Granted one month's leave of absence from August 16, 1910.

LANZA, A. J., Assistant Surgeon. Granted seven days' leave of absence from August 14, 1910.

MACCALLUM, CHARLES, Acting Assistant Surgeon. Granted thirty days' leave of absence from August 12, 1910.

MCCLINTIC, THOMAS B., Passed Assistant Surgeon. Granted seven days' leave of absence from August 15, 1910, under paragraph 191, Service Regulations.

MARSHALL, E. R., Assistant Surgeon. Granted twenty-one days' leave of absence from September 14, 1910.

MEAD, F. W., Surgeon. Granted thirty days' leave of absence from August 23, 1910.

PETTUS, W. J., Assistant Surgeon General. Granted one month and fifteen days' leave of absence from August 29, 1910.

RYDER, L. W., Pharmacist. Granted one day's leave of absence August 20, 1910, under paragraph 210, Service Regulations.

SCHUSTER, B. L., Acting Assistant Surgeon. Granted four days' leave of absence from September 1, 1910.

SPRAGUE, E. K., Surgeon. Granted one month's leave of absence from August 28, 1910.

STIMPSON, W. G., Surgeon. Leave of absence for twenty days from August 11, 1910, amended to read six days from August 11, 1910.

THURSTON, E. J., Pharmacist. Granted two days' leave of absence from August 15, 1910, under paragraph 210, Service Regulations.

WHITE, J. H., Surgeon. Granted one month's leave of absence from August 17, 1910.

WICKES, H. W., Surgeon. Leave of absence for one month from July 15, 1910, amended to read twenty-four days from July 15, 1910.

WILLIAMS, L. L., Surgeon. Granted seven days' leave of absence from August 11, 1910, under paragraph 189, Service Regulations.

WRIGHT, F. W., Acting Assistant Surgeon. Granted twelve days' leave of absence from September 1, 1910.

Appointment.

Dr. Benedict J. Duffy commissioned (recess) an assistant surgeon in the Public Health and Marine Hospital Service, August 5, 1910.

Promotion.

Passed Assistant Surgeon Henry W. Wickes commissioned a surgeon (recess) to rank as such from August 3, 1910.

Board Convened.

Board of medical officers convened to meet at the Marine Hospital, Memphis, Tenn., August 22, 1910, to determine the fitness of Pharmacist C. R. Ott for promotion to the grade of Pharmacist of Class 2. Detail for the Board: Surgeon P. C. Kalloch, chairman; Acting Assistant Surgeon S. P. Brooks, recorder.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending August 27, 1910:

BAILY, HOWARD H., Captain, Medical Corps. Ordered to proceed to Fort Ancient, Ohio, for duty as inspector-instructor of the First Ohio Brigade, Encampment, from August 27, to September 4, 1910.

BAKER, DAVID, Major, Medical Corps. Leave of absence extended twenty days.

BANISTER, WILLIAM B., Lieutenant-Colonel, Medical Corps. Left Camp Bruce E. McCoy, Sparta, Wis., on leave of absence.

BARNEY, CHARLES N., Major, Medical Corps. Will report in person without delay to Brigadier General William P. Hall, adjutant general, president of the army retiring board at Washington, D. C., for examination by the board.

BOWMAN, M. H., Lieutenant, Medical Reserve Corps. Ordered to the Presidio of San Francisco, Cal., for temporary duty.

COOPER, ALEXANDER F., Lieutenant, Medical Corps. Relieved from duty at the Army Medical School, and ordered to proceed to San Francisco, Cal., for assignment to duty at Army General Hospital, San Francisco, Cal.

CRUM, WAYNE H., Lieutenant, Medical Corps. Ordered to accompany Company A, Signal Corps, to Fort Benjamin Harrison, Ind., for duty at Camp of Instruction.

DE WITT, WALLACE, Major, Medical Corps. Left Fort Yellowstone, Wyo., on practice march with Troop E, 5th Cavalry.

GENERY, ERNEST R., Lieutenant, Medical Corps. Relieved from duty at the Army Medical School and ordered to Fort Leavenworth, Kansas, for duty.

GRISWOLD, W. CHURCH, Lieutenant, Medical Reserve Corps. Relieved from duty at Fort Oglethorpe, Ga., October 1, 1910, and will proceed to Brooklyn, N. Y., reporting on arrival to the Adjutant General of the Army. Lieutenant Griswold is relieved from active duty in the Medical Reserve Corps, to take effect upon the expiration of leave of absence granted him this date for one month and fifteen days, to take effect upon arrival in Brooklyn, N. Y.

HALL, JAMES F., Captain, Medical Corps. In addition to his other duties, will take charge of the office of the chief surgeon, Department of the Lakes, Chicago, Ill.

HALLETT, HARLEY J., Lieutenant, Medical Reserve Corps. Relieved from duty at Fort Totten, N. Y., and ordered to the Philippines Division for duty on transport sailing from San Francisco, Cal., November 5, 1910.

HEFLEBOWER, ROY C., Lieutenant, Medical Corps. Relieved from duty at Army Medical School, and ordered to Fort Hamilton, N. Y., for duty.

HESS, LOUIS T., Major, Medical Corps. Will proceed, at the proper time, to Fort Mott, N. J., for duty with the forty-second and one hundred and thirty-eighth companies Coast Artillery, en route to San Francisco, Cal. Major Hess is authorized to delay ten days en route in returning.

HETERICK, R. H., Lieutenant, Medical Reserve Corps. Left Fort Oglethorpe, Ga., en route to Key West Barracks, Fla. on detached duty.

HILL, FELIX R., Lieutenant, Medical Corps. Left Fort George Wright, Wash., en route to Wallace, Idaho, on detached duty.

HOPWOOD, L. L., Captain, Medical Corps. Relieved from duty at Army General Hospital, San Francisco, Cal., and ordered to Fort Monroe, Va., for duty.

JENKINS, F. E., Lieutenant, Medical Reserve Corps. Left Camp of Instructions, Fort Riley, Kansas, on leave of absence.

KELLER, WILLIAM L., Captain, Medical Corps. Left West Point, N. Y., with Cadets on practice march.

LYNCH, EDWARD C., Lieutenant Medical Reserve Corps. Reports for duty at Fort D. A. Russell, Wyo., Target and Manœuvre Reservation, Wyoming.

MANLY, C. J., Major, Medical Corps. Granted leave of absence for two months.

Maus, Louis M., Colonel, Medical Corps. Will proceed from Chicago, Ill., to Fort Benjamin Harrison, Ind., for duty at Camp of Instruction.

McIntyre, H. B., Captain, Medical Corps. Relieved from duty at Army General Hospital, San Francisco, Cal., and ordered to Fort Caswell, N. C., for duty.

Norris, H. C. R., Lieutenant, Medical Reserve Corps. Relieved from duty at Vancouver Barracks, Wash., and will proceed to his home, and upon arrival there report by telegraph to the Adjutant General of the Army for further orders.

Persons, Elbert E., Major, Medical Corps. Will, at the proper time, join the eleventh and eighteenth companies, Coast Artillery, in New York City, and proceed with those organizations to San Francisco, Cal., and upon completion of this duty return to station. Major Persons is authorized to delay one month en route on returning.

Pierson, Robert H., Captain, Medical Corps. Left Vancouver Barracks, Wash., on detached duty en route to Butte Falls, Oregon.

Reasoner, M. W., Captain, Medical Corps. Left Camp, American Lake, Wash., en route to Butte Falls, Oregon, with troops to fight fire.

Sanford, Joseph L., Lieutenant, Medical Reserve Corps. Granted thirty days' leave of absence. Relieved from duty at Fort Caswell, N. C., and ordered to Fort Ruger, H. T., for duty.

Thearle, William H., Lieutenant, Medical Corps. Relieved from duty at Army Medical School and ordered to Fort Leavenworth, Kansas, for duty. Granted ten days' leave of absence about September 1, 1910.

Woodson, Thomas D., Lieutenant, Medical Corps. Reports arrived at Republic, Washington, with Companies B and C, 1st Infantry, on detached service, left Camp, American Lake, Wash., August 13, 1910.

Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending August 27, 1910:

Asserson, F. A., Surgeon. Commissioned a surgeon from January 30, 1910.

Baker, M. C., Passed Assistant Surgeon. Commissioned a passed assistant surgeon from July 21, 1910.

Cohn, I. F., Passed Assistant Surgeon. Commissioned a passed assistant surgeon from February 28, 1910.

Dodge, A. H., Assistant Surgeon. Granted sick leave for three months when discharged from treatment at the Naval Hospital, Mare Island, Cal.

Donelson, M., Passed Assistant Surgeon. Commissioned a passed assistant surgeon from July 12, 1910.

Downey, J. O., Passed Assistant Surgeon. Commissioned a passed assistant surgeon from August 1, 1909.

Dunn, H. A., Surgeon. Commissioned a surgeon from February 5, 1910.

Fitts, H. B., Medical Inspector. Ordered to the Naval Medical School Hospital, Washington, D. C., for treatment; ordered home to await orders, when discharged from treatment at the Naval Medical School Hospital, Washington, D. C.

Graham, J. H., Pharmacist. Placed on the retired list from September 1, 19910; detached from duty at the Naval Hospital, Boston, Mass., and ordered home.

Higgins, M. E., Assistant Surgeon. Ordered to temporary duty at the Naval Medical School Hospital, Washington, D. C.

Huff, E. P., Passed Assistant Surgeon. Detached from the *Charleston* and ordered to the *New York*.

Iden, J. H., Surgeon. Commissioned a surgeon from October 31, 1909.

Lee, A. E., Passed Assistant Surgeon. Commissioned a passed assistant surgeon from May 9, 1909.

Leys, J. F., Surgeon. Ordered to temporary duty in the bureau of medicine and surgery, Navy Department.

Richardson, R. R., Surgeon. Ordered to duty at the navy yard, Portsmouth, N. H., and to additional duty in connection with the *Southery*, *Topeka*, and Naval Hospital at that place. Commissioned a surgeon from December 13, 1909.

Seaman, W., Surgeon. Commissioned a surgeon from November 20, 1909.

Steadman, W. G., Jr., Passed Assistant Surgeon. Commissioned a passed assistant surgeon from July 21, 1910.

Step, J., Surgeon. Commissioned a surgeon from March 5, 1910.

Straeten, R. J., Passed Assistant Surgeon. Commissioned a passed assistant surgeon from December 20, 1909.

Stuart, A., Surgeon. Commissioned a surgeon from February 19, 1910.

Valz, E. V., Passed Assistant Surgeon. Detached from duty at the navy yard, Portsmouth, N. H., and ordered to duty at the naval prison at that place.

Wilson, G. B., Surgeon. Ordered to duty on board the *New York* as fleet surgeon of the Asiatic Fleet.

The following named acting assistant surgeons are detached from duty at the places indicated and ordered to Washington, D. C., for examination for appointment as assistant surgeons: O. J. Miller, naval hospital, Washington, D. C.; W. H. Halsey, naval hospital, Norfolk, Va.; J. J. Lynch, naval hospital, Boston, Mass. E. E. Woodland, naval hospital, Philadelphia, Pa.; J. V. Howard, naval hospital, Philadelphia, Pa.; O. O. Hightower, naval hospital, New York, N. Y.; E. P. Halton, naval training station, Newport, R. I.; A. L. Jacoby, naval hospital, Newport, R. I., and W. E. Eaton, naval hospital, Boston, Mass.

Births, Marriages, and Deaths.

Born.

Freeman.—In Fort Riley, Kansas, on Wednesday, August 17th, to Captain Paul L. Freeman, Medical Corps, United States Army, and Mrs. Freeman, a daughter.

Married.

Crow—Bokenkamp.—In Agana, Guam, on Thursday, May 26th, Surgeon George B. Crow, United States Navy, and Miss Ruth Bokenkamp.

Weisse—Ripley.—In New York, on Saturday, August 27th, Dr. Faneuil Dunkin Weisse, and Mrs. Mary Churchill Ripley.

Died.

Amsden.—In San Diego, California, on Wednesday, July 13th, Dr. Edwin Amsden, aged eighty-four years.

Bulkley.—In Washington, D. C., on Wednesday, August 24th, Dr. John Wells Bulkley, aged eighty-seven years.

Bull.—In Buffalo, N. Y., on Monday, August 15th, Dr. Alexander Thompson Bull, aged eighty-three years.

Cannon.—In Norfolk, Virginia, on Sunday, August 21st, Dr. Douglas C. Cannon, aged seventy-four years.

Goodman.—In Chicago, on Friday, August 19th, Dr. Herbert M. Goodman, aged twenty-seven years.

Griffith.—In North Bay, Ontario, Canada, on Saturday, August 20th, Dr. Dayne H. Griffith, of Pittsburgh, Pennsylvania, aged twenty-six years.

Hasbrouck.—In Middletown, New York., on Wednesday, August 24th, Dr. Lydia Sayer Hasbrouck, aged eighty-three years.

Hull.—In New York, on Friday, August 26th, Dr. Joseph Janney Hull, aged seventy-seven years.

Hursh.—In Wernersville, Pennsylvania, on Saturday, August 20th, Dr. George Hursh.

James.—In Chocorua, New Hampshire, on Friday, August 26th, Professor William James, of Harvard University, aged sixty-eight years.

Logan.—In Girard, Pennsylvania, on Saturday, August 20th, Dr. O. Logan.

Low.—In Bloomsburg, Pennsylvania, on Sunday, August 21st, Dr. E. W. M. Low, aged eighty-one years.

Lydston.—In Chicago, on Thursday, August 25th, Mr. Allen Weymouth Lydston, son of the late Dr. James A. Lydston, aged eighteen years.

Mathews.—In Reading, Pennsylvania, on Wednesday, August 24th, Dr. James Meredith Mathews, aged ninety-three years.

McLaughlin.—In Clarksburg, West Virginia, on Friday, August 19th, Dr. J. M. McLaughlin, aged fifty years.

Pearce.—In Louisville, Kentucky, on Wednesday, August 24th, Dr. Edward Lee Pearce, aged forty-six years.

Skiff.—In Kent, Connecticut, on Friday, August 26th, Dr. Paul Cheeseborough Skiff, aged eighty-two years.

New York Medical Journal

INCORPORATING THE

Philadelphia Medical Journal and The Medical News

A Weekly Review of Medicine, Established 1843.

VOL. XCII. No. 11. NEW YORK, SEPTEMBER 10, 1910. WHOLE No. 1658.

Original Communications.

THE SOCIAL PLAGUES AND THE PUBLIC SCHOOLS.*

BY IRA S. WILE, M. S., M. D.,
New York.

The multiphased social plagues are passed by with loudest silence and no aspect has been more generally neglected than the relation they bear to the public. School education has long been vaunted as a means of annihilating the black plague, but the occurrence of this very plague in educational institutions has given rise to no passing thought.

Education is compulsory and the State that compels school attendance must assume the responsibility of intelligent foster parenthood to the end of safeguarding the children from every contagious disease and every preventible disease, communicable within the school. The State compelling school attendance tacitly guarantees its wards protection. The very ignorance and defenselessness of the children in the elementary schools imperatively demands that our educators and hygienists give heed to the question of the social plague as it may affect the public school. Schools in nurseries, orphan asylums, and institutions for defectives especially require careful supervision to stamp out the activity of these creatures of darkness, dampness, and dirt.

The books on hygiene and public health ignore this problem entirely. The splendid works on medical inspection of schools omit all references to gonorrhœa or syphilis as bearing upon school life. Does this omission evidence carelessness, prudery, forgetfulness, cowardice, or is there no school problem? School authorities have evaded a serious and awkward question requiring tact and delicacy. Dr. Morrow states that twenty per cent. of venereal disease is acquired before the twenty-first birthday. Admittedly, there is venereal disease in the secondary schools and colleges. Only 5.5 per cent. of our school children receive these higher forms of education. How about the 17,368,870 children in the elementary schools of this country? Do the social plagues present any problem relating to them? Where crowding is greatest, intimacy the closest, and cleanliness and personal hygiene is the least developed, is there a venereal problem? It is not my desire to seek and find a problem only after a diligent search in out of the way places. This paper is designed to be suggestive of a theme that warrants the fullest consideration. There is a striking paucity of literature upon the subject. Statistics have not been collated. The subject has been unwarrantably ignored.

The annual death rate from syphilis in the United States is increasing. The annual average of deaths for every 100,000 for the years 1901 to 1905 was 4.1. The number of deaths for every 100,000 from syphilis in 1908 was 5.4. The death rate from gonorrhœa has been unchanged at 0.1 for every 100,000. Gonorrhœa, however, only kills directly about one in 200 of its victims. The blindness, sterility, maiming, and operative procedures due to the gonococci are not fully known.

During the period of school life, sexual development occurs, sexual irritability arises, and false sex knowledge is acquired. The school throws no mantle of protection, educationally or physically, about children, when they most require it. In 1900, there were 446,133 teachers in the United States, of whom 118,519 were males and 327,614 were females. If we accept Dr. Morrow's statement that it is a "conservative estimate that in this country the morbidity from gonorrhœa would represent sixty per cent. of the adult male population and that of syphilis from ten to fifteen per cent.," are these teachers a possible source of infection of public school children? Are the janitors, scrubwomen, school attendants a source of possible infection of the children? Undeniably, yes, although how many cases have been thus transmitted is most difficult to ascertain. In one school I know that the janitor was discharged as syphilitic, and a maid, caring for the dishes, was sent away, after confessing her infection and revealing mucous patches and condylomata vulvæ.

Venereal diseases among the colored children are said to be unusually common according to Southern physicians, and there are 872,344 negro children between the ages of five and fourteen years in the elementary schools.

It must be remembered that the social diseases are not the results of crimes, nor do they belong to the so called criminal classes. They are diseases of the masses in all stations of life. The relation of civilization and syphilization has received sufficient attention. To secure eradication of these diseases, wholesale education is the prime requisite. The public must first be given all the facts by repeated, persistent public statements. By a promulgation of the demonstrated and demonstrable facts with relation to public schools, the nature of the problem will be first appreciated and then properly attacked by scientific prophylaxis.

*Read before the American Academy of Medicine, at St. Louis, June 6, 1910.

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In France, 20,000 children die yearly from syphilis. We do not know how many die annually from this cause in the Unitel States. We do, however, know that one fourth of the defectives in our institutions are there as a result of venereal disease. The report of the Committee on Ophthalmia Neonatorum of the American Medical Association, covering ten schools for the blind, revealed the fact that 25.21 per cent. of the new admissions during 1907 were blind because of gonorrhœal ophthalmia of the newborn. The report of a similar commission of the British Medical Association showed that one third of the blindness in schools for the blind resulted from gonorrhœal ophthalmia. And let us remember that the burden is well shown in that petty thing called taxation, bearing in mind that it costs the State eleven times as much to educate a blind child as to train one possessing full sight. The results of gonorrhœa and syphilis can not be estimated in dollars and cents, because even education purchased at such a cost does not give sight or hearing or health to the innocent victims, who were entitled to protection from such ills.

How much syphilis and gonorrhœa is there in our public schools? Dr. Rotch writes me: "I am sorry to say I cannot give you the information which you desire in regard to the prevalence of syphilis and gonorrhœa among school children." Dr. Morrow says: "I beg to say that no statistics of this nature exist so far as I know. Personally, I have known in my dispensary a large number of cases. At one time, I had on my service in the City Hospital, perhaps, a dozen cases, all of which were under fifteen years of age." Dr. J. Mason Knox believes "there are a number of such cases in the schools, but hardly sufficient, I should think, to warrant a public agitation." Dr. Porter, New York State commissioner of health, and many others had no statistics and could make no estimate. The results of medical inspection of school children gives no answer to the question. In New York city, in 1906, out of 78,401 children examined, 8,664 had posterior cervical glands enlarged; 17,928 had defective vision; 869 had defective hearing; 1,857 had defective mentality. What percentage of these defects were due to syphilis? There is no way of determining, although syphilis is a factor in the causation of just such conditions in children. In 1908, of 210,585 children examined, 2,918 cases of skin diseases were reported. Were any cases of syphilis in this number? In Detroit, from 1904 to 1905, out of 24,096 children reported, there were found 942 with contagious skin diseases and miscellaneous diseases. Did this include syphilis?

Hogarth, in his *Medical Inspection of Schools*, makes a classification of five types of sore throat, but does not include syphilis in the number. He does refer to interstitial keratitis due to inherited syphilis by stating: "This variety is generally observed only in the upper standards of the school." The splendid circular, issued by the Massachusetts Board of Education, *Suggestions to Teachers and School Physicians Regarding Medical Inspection*, makes no mention of syphilis among either the infectious diseases or diseases of the skin.

In Pasadena, the teachers are asked to make note of any vicious personal habits of the children. The frequency of masturbation, due to local sources of irritation, is well recognized. But masturbation is also a precursor of early sexual irritability. This indication of pubescence is not always recognized. It is, indeed, a signal of distress, present or future, and forms an important factor in the prevention of the social plagues. Examination of the sexual organs is permitted in Los Angeles, if the parents are present. In some private schools, such examination is a condition of entrance, whether the parents are present or not. In Boston, the figures are confused because the nurses have made reports totally at variance with the reports of the medical inspectors, as has been bewailed by Sullivan, Murphy, and Cronin.

It must be admitted that the primary lesion and eruption are frequently overlooked in children, and thus the medical inspectors, too, might overlook it. Heubner has called attention to this infrequency of generalized eruptions. Condylomata, however, are common about the mouth, pharynx, and genitalia. A complete medical examination by the school inspector is a serious proposition; and with one inspector examining 2,000 children, it becomes a difficult problem. If, however, before admission to a public school, each child had to have a certificate of health from the family physician, there is no reason to believe that the parents would object to the complete physical examination of their children. Those unable to pay a private physician could then receive attention at the clinics or avail themselves of the services of the medical inspectors at the school. This would be an important step in lessening the likelihood of school contagion of the venereal diseases.

Active acquired syphilis is not widespread among children of the schools with ages from five to fifteen years, but it occurs sufficiently frequently to merit respectful and thoughtful attention. The *Seventy-first Report of the Massachusetts Board of Education* refers to thirty-six cases of syphilis out of the total school membership. There is no statement as to whether these were acquired or congenital cases. Saxe noted the evidences of "heredosyphilis as are peculiarly frequent at school age, and are discernible during the routine physical examination which the examiner makes at school." He found twelve cases by the existent physical signs in 2,500 school children, from six to sixteen years old, examined by him. There were seven boys and five girls. All but one were mentally deficient; one had active keratitis; all had enlarged glands; and one had scars about the mouth. The report of the Committee of Seven in New York city in 1901, collected from 225 physicians, gave the statistics of 15,969 cases of gonorrhœa and 7,200 cases of syphilis. Of this number, there were in children, 218 cases of vulvovaginitis and five of urethritis, sixty-one cases of acquired syphilis, and 468 children with hereditary syphilis. The school nurses of Boston, in 1907-08 reported fifty cases of syphilis under the head of skin diseases. Spratling found three children with inherited syphilis in a class of forty children at Springfield, Mass.

Kapustin states that twenty-three per cent. of syphilis acquired during the ages of from one to ten years is acquired extragenitally. There is no doubt that a part of the syphilis acquired among

older children at school is gotten through sexual channels. Le Pileur, investigating 1,011 syphilitic girls, found that 232 suffered defloration before they were sixteen years old. Sex viciousness need not be adduced as a cause nearly as much as neglected and untaught pubescence of children knowing the habits of their elders. Thurston, chief probation officer of Chicago Juvenile Court, reported for August 1907, that venereal diseases were found in eighteen delinquent girls and two dependent girls and in one delinquent boy. Oltramare reported a case of acquired syphilis in a ten year old boy, sent home from school because of alopecia. Mery and Armand detailed two cases of pharyngeal ulceration of hereditary syphilitic origin in children, eleven and fourteen years old.

The records of the Children's Department of Vanderbilt Clinic are by no means complete, but a search of the few records available for the past five years reveals 102 cases of syphilis. Of this number twenty-six were in children between the ages of five and fifteen years—the period of elementary school life. Five had acquired syphilis. A thirteen year old presented a chancre of the tonsil and an eight year old had mucous patches and condylomata vulvæ. All the children had been in attendance at school. Among the heredosyphilitics, the following conditions are worth mentioning: Disseminated sclerosis, keratitis, periostitis, mental defectives. These all make poor subjects for education in crowded classes under overworked teachers. Let me repeat that these records are incomplete and are presented merely for what they are worth. Dr. T. Wood Clark mentioned a case of chancre of the penis in a seven year old. Dr. Lapowski has reported a case of a school child with a chancre of the tonsil, who was sent home from school by the medical inspector because of mumps, probably because of great enlargement of the submaxillary glands. Rumpf has asserted that tonsils, adenoids, high arched palates, etc., are developmental defects due to inherited syphilis, but this has no corroboration nor was it the result of a very scientific investigation. Imbecility, idiocy, mental defectiveness, epilepsy need but a word of comment that the public may know that syphilis is a noteworthy factor in placing this burden upon our educational system.

Gonorrhœa in school children is not uncommon, though its extent has never been accurately determined nor its importance sufficiently indicated. In 1890, Skutsch reported an epidemic of vulvovaginitis involving 236 school children of Posen. The cases occurred from the common use of the same bath tub. Sheffield, in 1896, gave the details of an epidemic of five cases, occurring at the Hebrew Sheltering and Guardian Orphan Asylum of New York city. Dr. Welt-Kakels, in 1904, reported 190 cases of vulvovaginitis among 11,578 children. Northrup, in 1906, reported 252 cases of gonorrhœal joint conditions among children of from ten to twelve years of age. Kimball, in 1893, stated "one of the worst cases of gonorrhœa I ever saw was in a child eight years of age and was acquired in a fashionable school in this city." Humser and Harris collected five cases of gonorrhœal peritonitis in children under seven years of age. W. Travis Gibb, studying the criminal aspect of venereal diseases in children, details rape cases, wherein the girls, from twelve to sixteen years of age, were willing victims. He calls attention to the frequency of sexual instincts in girls of nine and ten years. In 900 alleged sexual crimes, he found that 117 (thirteen per cent.) of the children had venereal disease; 2.5 per cent. chancroids; and only two or three cases of syphilis. The cases were examined early and probably the figures for syphilis are low because the primary incubation period had not elapsed. Dr. Flora Pollak states that "in a report of the women's venereal department of the Johns Hopkins Hospital Dispensary, out of 1,000 cases 7.2 per cent. were among the young children." She treated thirty school children out of forty-two cases. Wisely does she remark that they were "a menace to the entire school, physically and morally." Dr. Macatee, compiling the records of two children's hospitals in Washington, D. C., presented the following interesting figures:

CHILDREN'S HOSPITAL.

Year.	Total cases.	Syphilis.	Gonorrhœa.	Venereal percentage.
1905	638	8	15	3.7
1906	743	7	12	2.5

CHILDREN'S HOSPITAL DISPENSARY.

1905	2,899	32	43	2.5
1906	4,457	89	58	3.2

Unfortunately, however, no ages were specified.

Hamilton recently detailed the treatment of 344 cases of vulvovaginitis which occurred at the Vanderbilt Clinic during three years. Of this number 193 were in children over five years of age. Trenwith found six cases of vulvovaginitis out of twelve that he reported, in girls from five to twelve years of age. Among eighty-six cases of vulvovaginitis, recorded among the incomplete records of the Vanderbilt Clinic, outside of the cases reported by Hamilton, forty-one were in children over five years of age. It is hardly necessary to go more deeply into the figures of vulvovaginitis. Sufficient demonstration has been made to show that the condition is not uncommon among school children.

If we again ask, is there any problem relating to the public schools and the social plagues, the answer is certainly that there is the problem of prevention.

It is needless to remark that gonorrhœa and syphilis are contagious and are spread by both mediate and direct contact with infected materials. The venereal diseases have been innocently contracted by children from fondling, kissing, from the use of infected glasses and eating utensils, from the use in common of towels, sponges, pencils, polluted toilet seats. Direct sex contact of children with each other, exchanging chewing gum, the interchange of mouth toys, are also the means of spreading the diseases.

Prophylaxis means increased attention to school hygiene. Drinking fountains must supplant the foul drinking cups. Individual towels are absolutely necessary. Pencils, sponges, books must be individualized; and the children must be impressively instructed not to loan them to each other and at least to avoid putting such articles in their mouths. Toilet facilities should be improved. The toilets of the two sexes must not be close to each other nor within earshot of each other. The toilet seats should have the portion, which ordinarily would come in contact with the genitals, cut out so that

there is no possibility of contagion from such a source.

Complete physical examinations should be required, whether by the private physician or the medical inspector is immaterial. The examination of the genitals must include a microscopical examination of any pus or mucus that can be expressed from the genital organs. It is highly desirable to facilitate such accurate diagnosis.

The department of health or some official examiners of the department of education might well make such examinations gratuitously as they now make examinations for malarial organisms or for the diazo reaction. There is just as great a necessity for encouraging the thorough investigation of discharges for gonococci or the *Spirochæta pallida.*

Such examinations of school children would be rational and in line with the responsibility of the State to protect school children from each other.

What does the State do with the children suffering from these venereal diseases? If, as at present, these diseases are not detected, the school authorities can do nothing. Manifestly, children who are a source of contagion to others must be excluded from school. But first it is necessary to determine that the children are suffering from the transmissible diseases. How long should such infected children be excluded? The answer is brief and harsh: Until they are no longer a menace to the health of their fellow school children.

Boston, Philadelphia, Chicago exclude the children when the diseases are active and recognized by the medical inspectors. Baltimore, according to Dr. Pollak, does not thus exclude the possible contagion bearers. As Dr. C. H. Jones, assistant commissioner of public safety of Baltimore, in a personal communication to Dr. Knox, put it: "I confess that I am without sufficient data to permit me to give an opinion sufficiently definite to govern my actions in the future. I am aware that the diseases mentioned are sufficiently frequent between the years of five and fifteen to cause much concern, but at present I do not think it can be successfully met by any public agitation, as far as the children themselves are concerned."

Dr. Cronin, of the New York Health Department, informs me that "in any specific instance, upon the recommendation of the private physician, the department will dispose of the case in conformity with the facts of the case and the opinion of the private physician."

Medical inspection must progress so as to be of greater value. The classification of the defects of school children should, if possible, be placed upon an ætiological basis. Posterior cervical glands may be enlarged from pediculosis or syphilis. The interpretation of the figures is vastly different. If Hutchison's teeth are classed merely as dental defects, the records are defective. Keratitis may be syphilitic. How often is it syphilitic? There are no reports thereon by medical inspectors.

Children in the elementary schools should be taught personal hygiene thoroughly and the value of avoiding disease in general. Thus they will be obtaining the rudiments of the training that is essential at puberty to prevent early infection by one of the social plagues.

Health education, hygienic education in a hygienic educational institution is a right of school children that should be demanded by parents. Considered in this broad relation, the prevention of the social plagues is one of the intrinsic problems of our present school system.

230 West Ninety-seventh Street.

THE AUTHOR'S UNIVERSAL X RAY FRAME.

By Amédée Granger, M. D.,
New Orleans, La.,
Physician in charge of the X Ray Department, Charity Hospital; Lecturer on Radiology, New Orleans Polyclinic.

The apparatus is the result of three years of experimentation with a view to construct a device that will hold an x ray tube enclosed in an x ray proof container, and permit of its ready use in general radiological practice. Heretofore this has not been possible without having two or more x ray tables or stands, each especially adapted to a particular class of work. Besides the expense incidental to purchasing a number of devices, much time and energy is lost in changing, from one device to another to do different kinds of x ray work. The advantages that would arise from the use of a single apparatus, affording adequate protection without the necessity of having to use any extra protective device; an apparatus easy and simple of manipulation, and capable of universal and accurate use, must be appreciated by all. Practical experience with the apparatus which I now present to the medical profession, has convinced me that it does what I expected of it. With it, all work necessary in a general radiological practice can be done with ease and accuracy. It takes up comparatively little space, the changes in its parts or position necessary to adapt it to varying uses of the x rays are accomplished in a few moments, and all the manipulations are done from the operator's side of the table or stool without having to reach beyond or to the side of them.

Although I make these statements for my own apparatus, I do not wish it to be understood to mean, that with it special work can be done as easily as with specially constructed devices intended for those particular purposes. For instance, it is possible to make accurate orthodiographic tracings with my apparatus, but this can not be done as simply and easily as with an *orthodiagraph.* But on the other hand the field of usefulness of the latter apparatus is very limited when compare with that of my frame.

I trust that I shall be pardoned, if for the sake of thoroughness and accuracy, I am too technical in the description which follows:

DESCRIPTION.

A main frame sliding horizontally between tracks *1* and *2*. One of which, track *2*, is fixed on the floor; and the other, *1*, is overhead, attached either to the ceiling directly or held in position by means of supports which may be fastened to the floor, operating table or from the ceiling. This main frame is formed by two uprights *3* and *4*, with extension pieces *3'* and *4'* to accommodate ceilings of different heights, joined together by the two hor-

izontal pieces *5* and *6*. On and within this main frame, a carriage *7*, composed of two vertical and one horizontal portion, moves vertically. The horizontal portion of this carriage *8* is hinged in such a manner, that it can be held up by means of locking pin *35* forming an angle of 180 degrees with the carriage, or let down until stopped by chains *36* forming an angle of 90 degrees, with the carriage. Forward from the vertical portions of carriage *7* are four hollow extensions *30*; two on each side to receive the channels and sliding rods *31*. The carriage *7* is moved vertically on the uprights *3* and *4* of the main frame, by means of a rack and pinion lifting device *9*. The racks *9* are fastened on the back of the uprights *3* and *4*, and the pinions *9'* and joining shaft are fastened to the carriage *7*. The movement of the pinions on the track is controlled by means of pilot wheel *10* through shaft *10'* and the beveled gears *11*. The turning of the pilot wheel *10* to the left moves the carriage *7* upward, four inches for every complete turn of the wheel; but it cannot be turned to the right, and therefore let carriage *7* down, without first releasing a mechanical brake contained in case *13* by means of handle *12*. This break is positive and very sensitive.

This iris diaphragm is controlled by means of lever *21* from the outside of the box and the size of the aperture can be varied from one inch to eight inches. This is indicated on the outside of the box by a scale worked in one half inches. Placed along the travel of the lever, and will safely guard against any possible dropping of the carriage *7*.

The tube holding box *18* lined with x ray proof material and having circular opening with iris diaphragm *20*, and channels *22* to receive various attachments, lead glass window *24* and side openings *25* to accommodate the ends of x ray tubes, is held in metal cradle *14* in such a manner that it can be made to swing to the right or left, forming various angles with its longitudinal axis. The box *18* can be maintained in these different positions by means of locking wheel *19*. The metal cradle *14* is held within hinged frame *8* by means of sliding parts *15* which move on the side pieces of the hinged frame *8* and can be maintained stationary on them by means of locking wheel *46*. The cradle *14* swings in sliding parts *15* in such a manner that it can be moved to the front or back, forming different angles with its transverse axis and held in the various positions by means of locking wheel *17*.

Channel *31* receives holder frame *32* provided with channel *33* to receive screen *34*, which is faced with x ray proof material or a plate holder provided with rits so as to accommodate x ray plates sizes 8 by 10, 11 by 14, or 14 by 17 inches enclosed in their envelopes.

To the upper horizontal portion *5* of the main frame are attached two fibre extensions *37* to the free ends of which are attached the glass rods *38*. The latter have attached to their free end a metal cuff provided with an eye *39* to which the conducting wires from the x ray generator apparatus (coil, static machine or transformer) is to be attached, and spring reel with connecting wires *40* which go to the end of the x ray tube projecting out of openings twenty-five inches in tube holding box *18*.

The x ray tube is held in box *18* in a suitable holder in such a manner that it can be readily focused over the diaphragm opening *20*, that is, so that the ray of normal incidence given off by it will pass through the very centre of the aperture in iris diaphragm *20*.

Movements. From this description, it is readily

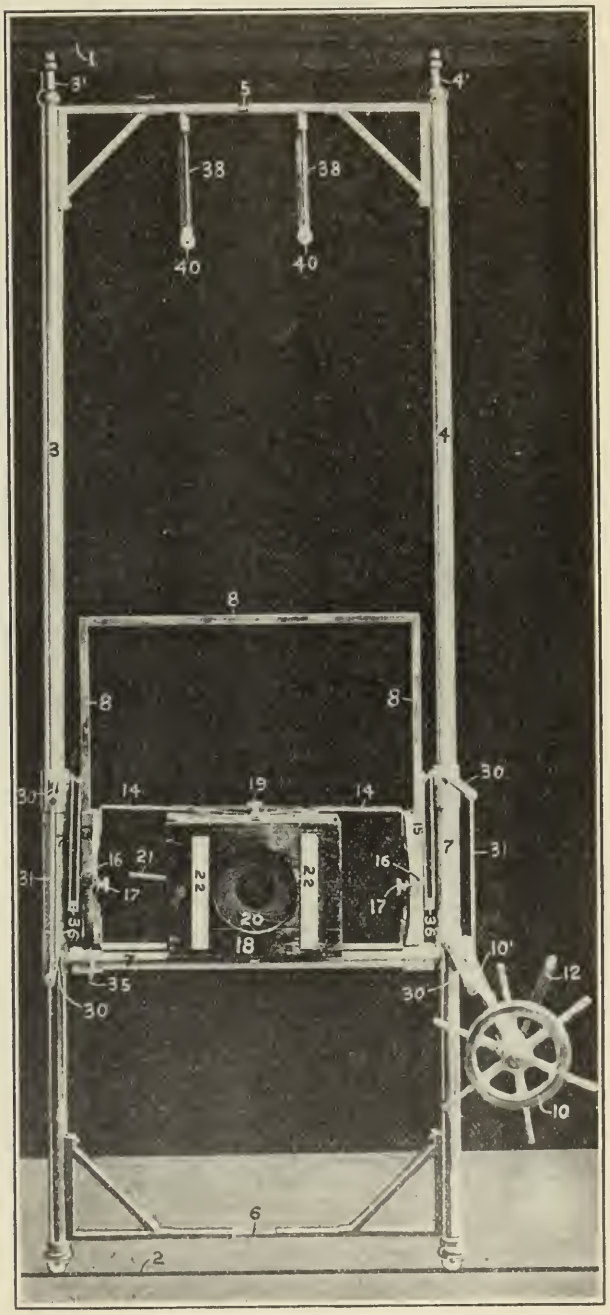

FIG. 1.—*1*—Overhead track. *2*—Track on floor. *3* and *4*—Uprights of main sliding frame. *3'* and *4'*—Upper adjustable extensions. *5* and *6*—Horizontal parts of main frames. *7*—Carriage for tubes and attachments vertically adjustable on sliding frame. *8*—Hinged frame. *10*—Pilot wheel. *11*—Bevelled gears. *12*—Brake handle. *14*—Metal cradle for holding lead lined box. *15*—Sliding holder to carry *14*. *16*—Set screw to fix sliding holder, *15*, on hinged frame, *8*. *17*—Set screw to fix metal cradle, *14*, at different angles on sliding holder, *15*. *18*—Lead lined box. *19*—Set screw to fix lead lined box, *18*, at different angles in metal cradle, *14*. *20*—Iris diaphragm. *21*—Handle to work iris diaphragm. *22*—Channel to receive attachments, *23*, *26*, *27*, *28*. *30*—Hollow extensions from carriage, *7*, to receive *31*. *31*—Channel and rod fitting in, *30*, and to receive, *32*. *35*—Pin to hold hinged frame, *8*, in the vertical position. *36*—Chains holding hinged frame, *8*, in the horizontal position. *37*—Fibre extensions. *38*—Glass rods. *40*—Spring reel with connecting wires to x ray tube.

apparent that the lined frame *8*, being in the position shown in Figs. 1 and 2, a horizontal movement is imparted to the tube holding box *18*, whenever the main frame is made to slide between its tracks *1* and *2*. This can be done by seizing the channel *31* with the left hand and the pilot wheel with the right, or if the holder frame *32* is in position, by taking it, when the main frame can be moved from side to side along its tracks, carrying with it the tube holding box, etc.

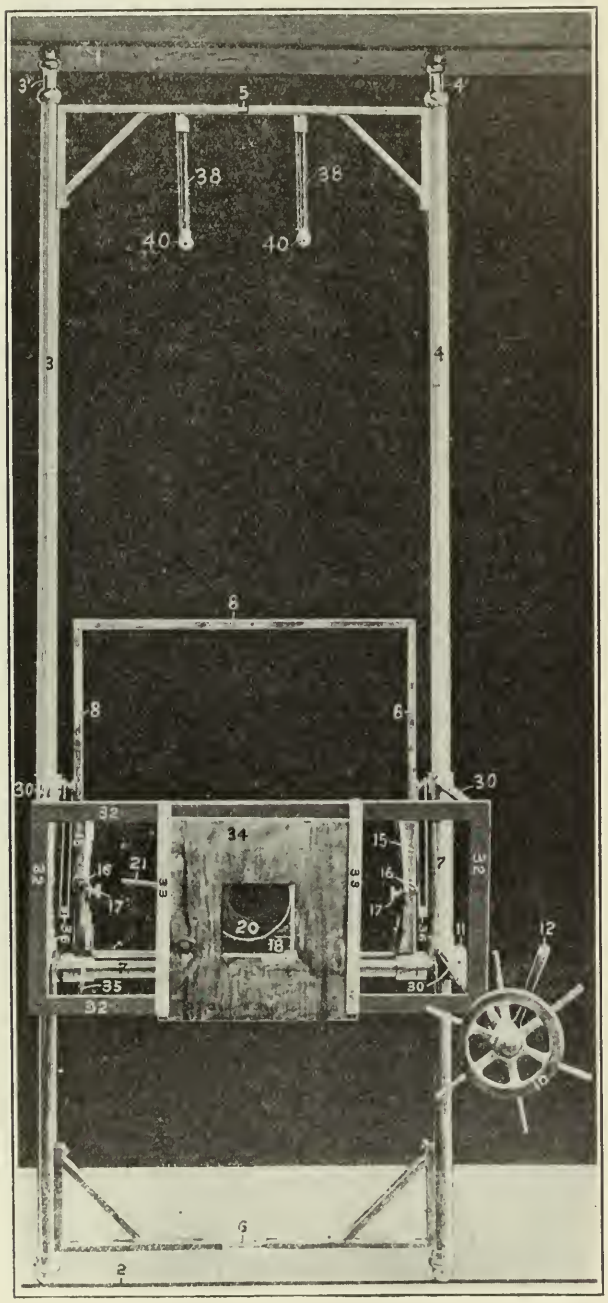

FIG. 2.—*1*—Overhead track. *2*—Track on floor. *3* and *4*—Uprights of main sliding frame. *3'* and *4'*—Upper adjustable extensions. *5* and *6*—Horizontal parts of main frame. *7*—carriage for tube and attachments, vertically adjustable on sliding frame. *8*—Hinged frame. *10*—Pilot wheel. *11*—Bevelled gears. *12*—Brake handle. *14*—Metal cradle for holding lead lined box. *15*—Sliding holders to carry *14*. *16*—Set screw to fix sliding holder, *15*, on hinged frame, *8*. *17*—Set screw to fix metal cradle, *14*, at different angles on sliding holder, *15*. *18*—Lead lined box. *20*—Iris diaphragm. *21*—Handle to work iris diaphragm. *30*—Hollow extensions from carriage, *7*, to receive, *31*. *32*—Frame having channel, *33*, to receive screen holder, *34*, or plate holder. *35*—Pin to hold hinged frame, *8*, in the horizontal position. *36*—Chains holding hinged frame, *8*, in the horizontal position. *37*—Fibre extensions. *38*—Glass rods. *40*—Spring reel with connecting wires to x ray tube

It is self evident that, since the extensions *30* which hold the screen and plate holders is attached to carriage *7*, these vertical and horizontal movements of the tube will be followed automatically by similar movements of the fluorescent screen. This will not only facilitate all fluoroscopic work, but will permit orthodiagraphic tracings to be made.

The tube holding box can also be moved backward to the right or left, and fixed in these positions by means of wheel *19*, its diaphragm opening, forming angles of from 90 to 45 degrees with the screen or plate.

With the hinged frame in position shown in Fig. 3 besides the vertical and horizontal movements mentioned before, the tube holding box can be moved to and from the main frame within the hinged frame *8*. It can also be swung so as to form angles of from 90 to 45 degrees with an operating table placed under it or with the floor to the right or left in its longitudinal diameter or to the front or back in its transverse diameter.

Of still greater value is the fact, that all these movements are accurate and true, no deviations or displacements are possible as in the case of the usual floor stands and compression diaphragm tables. The main frame moves in a straight line between its tracks *1* and *2*, *3* and *4* of the main frame and the tube holding box moves to and from the main frame in a straight line between the side pieces of the hinged frame *8*. This becomes all important, when accurate work without distortion of the shadows is the desideratum, especially so when making stereoscopic skiagraphs, using the method of Payne for the localization of foreign bodies and making orthodiagraphic tracings, for with my apparatus, once the ray of normal incidence has been properly centered over the diaphram opening, it can be thrown at will over any desired point, and at various angles to that point with accuracy and precision.

USES.

Radioscopy. It is assumed that the x ray tube has been properly placed and centered in the x ray proof containing box *18*. The normal x ray would, under these conditions, pass through the intersecting points of the two crossed wires which are held directly in front of the true centre of the diaphragm. An attachment consisting of a frame with two crossed wires can be placed for this purpose in the channel *22* on the front of the box *18* and centered.

The shadow of the intersection of the crossed wires on the fluoroscopic screen would therefore indicate on what part of the screen the normal ray impinged.

For ordinary fluorescent work and the apparatus in the position as shown in Fig. 1 and the tube properly centered in box *18* the patient is placed in front of the apparatus. Holder frame *32* is now inserted in channel *31*, the fluorescent screen in *34* or in channels *33* as shown in Fig. 2. This leaves

both hands free for manipulation of the apparatus or to change the position of the patient if necessary.

The fluorescent screen and its holder are faced with x ray proof material; the screen itself with lead glass and the wooden holder with three pound sheet lead. With the x ray tube enclosed in a box lined with very heavy protective material, and the screen so faced the danger of exposure to the operator is almost nil. Of course, he will have to wear protective gloves as the hands will be exposed during the various manipulations of the patient and apparatus. An apron is also necessary for the protection of the lower part of the body, to prevent any possible harm arising from some of the more oblique rays, when the iris diaphragm is at full aperture. However, the action of the direct rays, the most harmful, is effectually arrested by the protective lining on both screen and holder. The patient is comfortably seated on a high stool in order that he may be turned completely around and placed either in the anteroposterior, posteroanterior, lateral, or oblique position. The screen is kept in contact with the patient in any of these positions by a simple movement of the holder frame *32* to or from the main frame. A lateral movement is imparted to the tube and screen by taking hold of holder frame *32* and moving it to the right or left by which action the main frame is made to slide between its tracks *1* and *2*. The tube and screen are moved up and down necessitating no change of position, by turning the pilot wheel *10* which is placed within reach of the operator's right hand, without having to move from his stand, or reach to the side or behind the patient. It will be observed that the movements are controlled while remaining in one position and this with ease and convenience and with the minimum of manipulation and absolutely no annoyance to the patient.

To locate foreign bodies or make tracings of the heart, etc., the attachment with crossed wires is made use of as already explained. The area of irradiation, which depends upon the size aperture of the x ray proof diaphragm used, is controlled by means of lever *21* also placed conveniently within reach.

Radiography. To make radiographs of patients in the sitting or upright posture, the apparatus is in the position just described except, screen holder *34*, is replaced by a plate holder. The latter will take plates 8 by 10, 11 by 14, or 14 by 17 in their envelopes.

The advantage of being able to make a skiagraph of a patient immediately after a fluoroscopic examination and under the same conditions *i. e.*, same position of patient and tube and screen or plate in the latter instance, will, I believe, appeal to all röntgenologists.

In this position stereoscopic skiagraphs can also be made by a simple tilting of the tube holding box backward to the right or left and then moving the whole frame on its tracks one way or the other.

For other skiagraphic work, the hinged frame *8* is dropped down, first removing lock pin *35*, until arrested by chains *36* as shown in Fig. 3. Any kind or make of table placed under the hinged frame will answer the purpose. The diaphragm opening in the x ray proof box, now lies directly

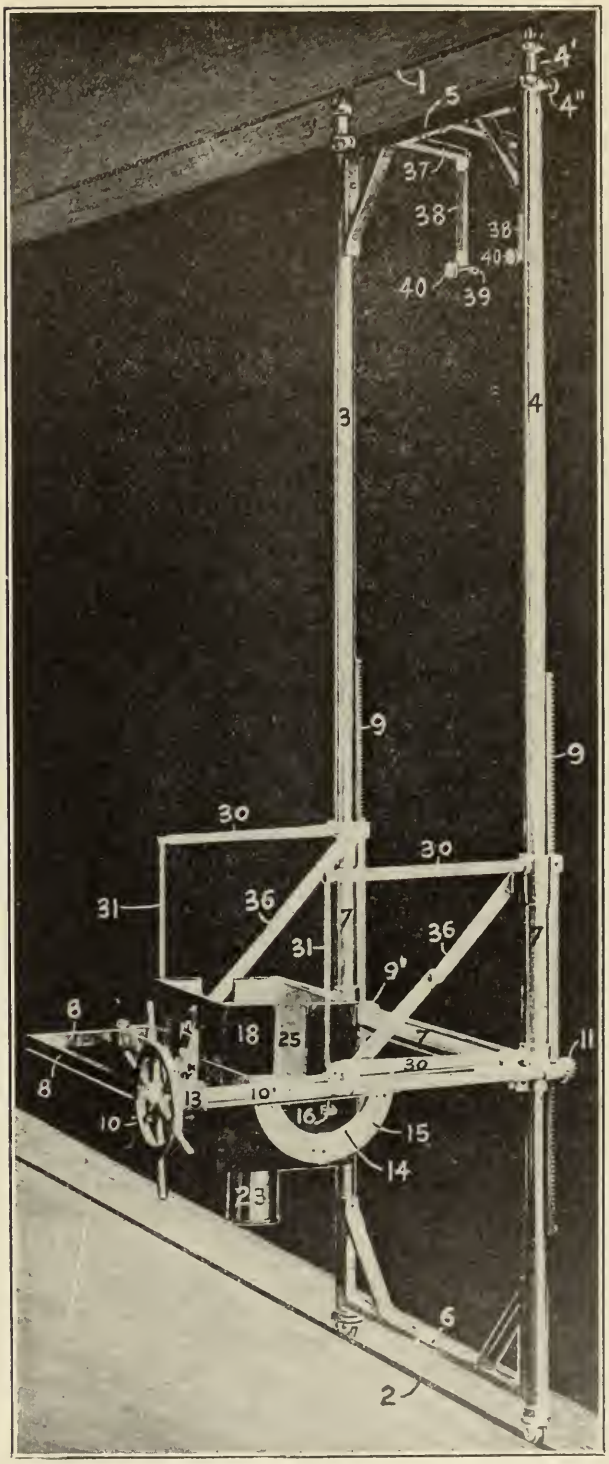

FIG. 3.—*1*—Overhead track. *2*—Track on floor. *3* and *4*—Uprights of main sliding frame. *3'* and *4'*—Upper adjustable extensions. *5* and *6*—Horizontal parts of main frame. *7*—Carriage for tube and attachments, vertically adjustable on sliding frame. *8*—Hinged frame. *9*—Rack. *9'*—Pinions. *10*—Pilot wheel. *11*—Bevelled gears. *12*—Brake handle. *13*—Case carrying break. *14*—Metal cradle for holding lead lined box. *15*—Sliding holders to carry, *14*. *16*—Set screw to fix sliding holder, *15*, on hinged frame, *8*. *18*—Lead lined box. *23*—Compression cylinder. *24*—Opening in lead lined box closed with lead glass. *25*—Openings in sides of lead lined box to accommodate ends of x ray tubes. *30*—Hollow extensions from carriage, *7*, to receive, *31*. *31*—Channel and rods fitting in, *30*, and to receive, *32*. *36*—Chains holding hinged frame, *8*, in the horizontal position. *37*—Fibre extensions. *38*—Glass rods. *39*—Attachment for wires from x ray apparatus. *40*—Spring reel with connecting wires to x ray tube.

over the table. With the x ray proof diaphragm at full aperture eight negatives, size 14 by 17, can be made. The position of the target of the x ray tube, as well as the functioning of the latter can be seen through the lead glass window *24*.

In focusing the tube holding box over any part of a patient the movement from head to heel is obtained by taking hold of hinged frame *8*. When the frame will be made to move on its tracks alongside of the table from end to end, then, the movement from side to side over the table is obtained by moving metal cradle *14* between the side pieces of hinged frame *8* to and from the main frame; the movement to and from the table is obtained by turning the pilot wheel to the right or left.

When executing stereoscopic skiagraphs or locating foreign bodies (Payne's method) the tube holding box can be inclined to form an angle of 45 degrees or moved with the table in either direction in both its longitudinal and transverse diameters. In all these different positions it can be firmly retained by means of locking wheels *16*, *17*, *19*.

Whenever compression is required, the compression cylinder *23* is attached to the tube holding box by inserting in channel *22*. It can be made gently and evenly without shock or jar. At the same time the box and cylinder may be moved downward by a firm release of the brake and a turning of the pilot wheel to the left. I know of no other apparatus which will give the same degree of compression so evenly and smoothly, yet overcoming the resistance of the tissues without exciting either pain or muscular contraction. When once in position no ordinary movement, as breathing, etc., will move the compression cylinder.

Again, it will be noticed that these movements and all those that I have ever found necessary in a wide experience in making skiagraphs, are made with ease and convenience from the operator's side of the table. There is no necessity of having to reach over or beyond the patient and table, or to walk around the latter a number of times to make numerous adjustments. Furthermore, these movements are all made in a straight line and no deviations and displacements are possible. This alone, should make it invaluable to the careful and accurate x ray worker.

Radiotherapy. Treatment can be given with the patient either in the sitting or recumbent position, the apparatus being in position shown in Figs. 1 and 3 respectively. Experience and the greater familiarity with the apparatus will soon suggest the position of the tube holding box best suited for the treatment of each case. By means of lever *21* the opening in the x ray proof iris diaphragm can be made as small as one inch in diameter, when all tissues beyond that will be protected from the influence of the x rays.

In treating smaller surfaces these can be covered with a piece of lead foil two inches square, with a hole, the proper size and shape cut in it. An extra attachment fitting in a channel *22* and provided with a cuff to receive lead glass shields of different sizes, could also be used.

CONCLUSIONS.

In conclusion I believe that my universal x ray frame offers the following advantages:—

1. It slides between tracks making it possible to move it from end to end of the operating room, and out of the way when not in use. When the hinged frame is up the whole apparatus occupies but little space. Any type of operating table or stool can be used in connection with the frame.

2. All movements are controlled from one stand and from the operator's side of the table or screen without having to reach over or beyond the patient.

3. The apparatus is truly universal. With it all kinds of x ray work can be done. It combines in one apparatus the usefulness or utility of at least two of the other similar devices on the market.

4. The movements imparted to the x ray tube are true and accurate. They are obtained with ease and with a minimum of manipulation.

5. The x ray tube and the fluorescent screen move simultaneously. Skiagraphs can be made in both the sitting and recumbent posture.

6. The protection given to both patient and operator is all that can be desired.

7. The connecting wires from the generating apparatus pass overhead. This allows the operator to pass around the apparatus and between it and the generating apparatus without disturbing the connections. The connecting cords to the x ray tube being wound on a spring reel, are always kept taut no matter what the position of the x ray tube.

8. The construction is exceedingly simple; even to the lifting mechanism which is of the simplest kind.

I wish to express my thanks to Mr. J. P. Marquis, of this city, who constructed the apparatus, for his invaluable assistance, in solving the many mechanical problems which presented themselves. The apparatus and a working model of it which he also made, are proof, both of his excellent workmanship and his mechanical ingenuity.

1212 Maison Blanche Building.

PUSTULAR TYPHOID ROSEOLA.

Report of a Case with a Review of the Literature.

By Cary Eggleston, M. D.,
New York,

Deputy Physician to New York Hospital, Outpatient Department; Physician to Outpatients, Bellevue Hospital Dispensary.

The occurrence of true pustular rose spots in typhoid fever seems to form one of the rarest complications of that common and much studied disease. So rare, indeed, as to warrant a detailed description of the following case, observed in the New York Hospital in 1909.

Case. On August 22, S. B., a robust Hebrew boy, of fourteen years of age, was admitted to the ward complaining of weakness, lassitude, feverishness, and diarrhœa. One week before he had eaten a hearty meal chiefly of meat and fruit. No acute gastrointestinal symptoms resulted, but he began to feel weak and very apathetic. A severe headache was present all the day of onset but did not recur thereafter. The lassitude and apathy grew steadily more pronounced. Four days before admission a feeling of feverishness was noticed, coming on toward evening, a diarrhœa of three to four watery evacuations a day developed. These were his only symptoms.

His family history was negative, both parents being alive and well.

He had measles a few years ago and no other illness before or since.

Upon physical examination his apathy was quite apparent. His tongue was furred but moist. Pharynx slightly congested. The heart was normal, save a soft systolic murmur heard at the pulmonic area and, faintly, also at the apex. There were a few scattered subcrepitant râles in the lungs, both front and back. The abdomen was somewhat tender to pressure in the umbilical region. The spleen was not enlarged nor was it palpable. Excepting the eruption, which will be described separately, the examination was otherwise negative. Temperature, 100.4° F.; pulse, 80; respiration, 20.

Pustular roseola:—Upon the abdomen and lower anterior portion of the chest there were 12 to 15, or more, "spots." The majority was small, about 2 or 3 mm. across, rose red, maculopapular, fading on pressure, and quite typical typhoid rose spots. Several were somewhat larger and were capped with small vesicles, containing a clear fluid. Two or three were very large; each 10 to 12 mm. in diameter and deep rose red at its base, which was infiltrated and somewhat elevated, forming a distinct areola about a central yellow pustule. These pustules were quite tender on direct pressure. They bore no relation to the hair follicles. The vesicles and pustules closely resembled those of variola and varicella. They were, however, somewhat larger and at no time umbilicated. Two days after admission, the ninth of the disease, three new typical rose spots were observed. A number more appeared on each of the two succeeding days. The rose spots, in several instances, became capped with vesicles shortly after their appearance. Some remained vesicular but a few rapidly went on to form pustules exactly similar to those already described. The accompanying photograph shows the eruption fairly clearly.

No new spots appeared after the twelfth day of the disease. The entire eruption was closely confined to the front of the body from the lower chest to the groins. There was no lymphadenitis associated with the pustulation. Those which remained typical rose spots faded in the customary two or three days after their appearance. The vesicles dried up and were gone in four or five more days. The pustules disappeared slowly, requiring from ten to fourteen days for resorption. Two of the larger ones were opened and the pus expressed. The pus was a very thick, stringy, yellow material, unlike ordinary staphylococcic pus in gross appearance. Smears showed a few leucocytes and pus cells, many threads of mucus, and a few unidentified bacteria. Cultures made from the pus developed a pure growth of the *Staphylococcus aureus.*

The two large rough spots on upper abdomen are covered with cotton and collodion, these were opened for culture. The pustules and vesicles cannot be plainly distinguished. The lines drawn about the rose spots were to indicate different crops.

The patient was noticeably clean and quite free from any form of skin disease such as acne or parasites. A dermatologist who saw the eruption said that it was not that of any recognized cutaneous disease. No bathing or hydrotherapy was used in the treatment of the case. The only drug employed was liquor ammonii acetatis, one drachm every four hours as a placebo.

The course of the disease in general was very mild. The symptoms given in the beginning were the only ones throughout the illness. The spleen became palpable on the ninth day of the disease. The fever was a continued one, lasting eighteen days, and defervescing by lysis.

Blood examination showed from 8,000 to 13,000 leucocytes with sixty-five per cent. of polynuclear neutrophiles and a hæmoglobin of ninety per cent. Two Widal agglutination tests were positive.

On the twenty-eighth day, two or three days after the temperature had reached normal and the symptoms and physical signs had disappeared, a relapse set in. It was marked by headache, weakness, and lassitude, and a return of the bronchitis and enlarged spleen. There was no rash of any form in this relapse. The fever again subsided by lysis and recovery was rapid and complete.

The interest aroused by the peculiar cutaneous developments of this case led to a search of the literature for similar cases. A diligent hunt was rewarded by the finding of but four references to its occurrence. These will be briefly abstracted that all the cases may be brought together for examination.

Cabiran (1), writing in 1879, says that Andral and Piorry were the first to call attention to varioliform eruptions in typhoid fever. In the instances observed by them the rash appeared on from the seventh to thirteenth day, occurred upon the abdomen and in the sacral region, lasted from ten to twelve days, and tended to produce ulceration. As their cases were all fatal they considered it of unusually bad prognostic import.

Alexander (2), in 1884, recorded a case of extreme gravity in an adult who was put into a continuous warm bath on the eleventh day of the disease to prevent bed sores. A diffuse pustular eruption appeared on the back of his legs and trunk. Alexander offers the severity of the general infection and the blood stasis in the skin of the back, resulting from circulatory depression, as an explanation of the development of the pustules.

Birnbaum (3), who is the only author to definitely describe *Pustulose Typhus Roseola* (pustular typhoid roseola) presents three cases, briefly as follows:

Case I. An ordinary typhoid roseola developed in a girl of eight and one half years of age in the second week of her illness. In the third week the eruption spread over the greater part of her trunk. Soon after this the rose spots on the abdomen became vesicular and then pustular. The individual pustules were yellow, about the size of a lentil, and contained a turbid fluid. A narrow red areola surrounded the base of each. These pustules became numerous on the trunk. A few were also found on the extremities. The eruption dried up and healed in about two weeks. A few of the pustules on the back grew to the size of a pigeon's egg and had to be incised. The pus was bright yellow, thick, and creamy. There was no lymphadenitis.

Case II. A younger sister, age seven, presented a similar picture save that the pustules appeared earlier and the whole course was shorter. Cultures in both cases revealed the presence of a diplococcus much like Friedländer's pneumococcus. Various methods were tried but an exact identification of the organism was impossible.

Both cases were treated with baths. No drug was given which was likely to cause an eruption.

Case III. A boy of twelve years. The typical typhoid spots appeared on the fifth day. On the seventh three clear vesicles developed and went on to pustulation on the following day. Cultures were sterile in this case.

All three cases were mild and the patients recovered.

Birnbaum suggests the presence of typhoid bacilli lying in the papillæ and deeper epithelial layers of the skin as an explanation of the development of vesicles in the delicate skin of children, with a secondary pyogenic infection as a cause of the pus formation.

MacRae (4) in Osler's *System* says: "Some writers describe 'pustular rose spots.'" He, however, makes no further comment.

In reviewing all of these cases now brought together it will be seen that Birnbaum's three cases and the one detailed in this report have some common features. The patients were all children, the illness was mild, the cultural findings from the contents of the pustules were not uniform, but in no case were typhoid bacilli found, and lastly, in each case there was a definite development of the pustules from existing rose spots.

In the case reported by Alexander the extreme severity of the general infection and the location of the eruption in the parts of the body subject to pressure and stasis together with the failure to definitely connect the pustules with the typhoid roseola casts doubt upon the propriety of including the case. It is brought in, however, on account of the early appearance of the eruption and its diffuse character. The uniformly fatal outcome of the cases of Andral and Piorry, the tendency to ulceration, and the fact that they were working before the day when laboratory aids were available to render the diagnosis more certain lead one to think that they may possibly have mistaken an atypical form of some other disease for typhoid with variolaform eruption.

In conclusion, it seems possible to make but two deductions from the few cases so far reported. First, that the development of the pustules is probably due to a secondary local infection by one or another pyogenic organism and not to a pyogenic action of the *Bacillus typhosus*. Second, that, whatever the cause, the phenomenon is one of the rarest of the complications of typhoid fever.

For the privilege of making this report the author is greatly indebted to Dr. Lewis A. Conner, in whose service at the New York Hospital the case occurred.

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1. Cabiran. *Thèse de Paris*, 1879, xix, pp. 18-19.

2. Alexander. *Vierteljahresschrift für Dermatologie*, xi, pp. 115-117, 1884.

3. Birnbaum. *Deutsche medizinische Wochenschrift*, xxix, pp. 843-844, 1903.

4. Osler. *Modern Medicine*, ii, pp. 117.

104 West Seventy-fourth Street.

TREATMENT OF PHTHISIS BY IMMOBILIZATION OF PORTIONS OF THE TRUNK.

With Compensatory Increase of Motion of Parts Directly over Tuberculous Involvement.

(A Preliminary Report.)

By B. G. R. Williams, M. D.,
Paris, Illinois.

Pulmonary tuberculosis is a disease with a vicious circle. We have long known that, as the disease progresses, the chest wall becomes fixed, causing lagging locally over the tuberculous process and later the diminished expansion when large portions of the lung are affected. It is thus that that part involved fails to be aerated properly even were it not for the clogged bloodvessels, the diminished elasticity of the lung tissue, and the filling of the air cells with tuberculous exudates. And so, in abundance of air, this part of the lung suffers from local asphyxia giving the bacilli a better hold and

Fig. 1.—Photograph showing application of the half corset.

in turn making more rigid those portions of the chest wall immediately external. Because of poor aeration the bacillus of Koch chooses the apices of the lung. In order to live it must cut off the blood supply—to exist it must cut off the air. Truly the disease has a vicious circle.

Many cases of pulmonary tuberculosis are diagnosticated in their incipiency. While the bacillus struggles to cut off the blood and air supply—which means the oxygen supply—we should attempt to increase both of these and increase them chiefly at the point where the bacillus is lodged. Fresh air is necessary, but do we always succeed in getting it to the right spot?

Taking the pathology of the disease into consid-

eration, I have devised a treatment based upon principles well known in the mechanics of respiration. To be brief, I would, during appropriate periods, immobilize certain portions of the trunk, hoping to effect compensative aeration and pabular nutrition of those portions of the lung involved in the tuberculous process.

PATHOLOGY IN RELATION TO THIS ARTICLE.

Just how and where the tubercle bacillus gets its first hold can scarcely be stated in every case. Beyond a doubt those cases of aspiration infection are more common than are often supposed, the bacilli attacking first the alveolar epithelium. But the secondary crop of Laennec and any further extension of the process proceeds along entirely different lines, the bacilli being disseminated by the lymph and blood streams.

This process may be described as a battle between the lung tissue and the bacilli, in which the circulating fluids come to act as an involuntary ally of the germs—involuntary, since oxygen and perhaps other substances are not present in sufficient quantities to aid in overpowering and destroying the invaders.

Suppose a tubercle bacillus is released from the primary focus into the capillary circulation. This current is sluggish because of the poisonous and mechanically retarding process so near it and little oxygen remains. The bacillus is carried along for a few millimetres, and then attacks the vessel wall. Necroses of the endothelial cells result, and this means coagulation of the blood in the capillary with resulting thrombosis. In this thrombus a colony of the bacilli develop. There is at once a fibroblastic reaction in the surrounding tissue but no angioblastic reaction. Since the old vessels are destroyed and no new ones formed, the tissue is avascular; that is the tubercle, for we may now call it such, dies. Caseation—more rarely sclerosis—results. The remaining pathological picture is unimportant to us so far as this article is concerned. The results are always deoxidation and diminished function for the benefit of the tubercle bacillus. More germs are loosened, the blood is aerated improperly, inspired air is prohibited to a greater and greater extent, and soon there is a lagging in the chest wall just above.

Suppose at this point we are able to increase the aeration and pabular nutrition of this portion. If we could encourage the formation of normal, vascular connective tissue and could keep the blood in the vessels nearest the process in free circulation; if we could increase the amount of inspired air at the point of danger and prevent the bacilli from involving new portions; if we could isolate them, trap them in their mischief, and suffocate them in their work keeping the tissues just outside the process saturated with fresh blood and lymph—then would we have a valuable aid to our fight against the great white plague.

Just at this point it may be well to recall that oxygen of itself neither kills nor even inhibits the growth of the tubercle bacillus. This is well shown in the aerobic conditions necessary to its culture, although it is at times a facultative anaerobe (Fränkel). I am inclined to believe that oxygen aids *in vivo* merely by increasing the resisting power of the lung tissue and the vascular bodies—increasing pabulum, eliminating bacterial and metabolic products, stimulating the phagocytic action of the leucocytes, and aiding the formation of chemical antibodies.

COMPENSATING RESPIRATION IN PORTIONS OF CHEST NOT RENDERED IMMOBILE.

Assuming that the conception, as given in the preceding, of the pathology of pulmonary tuberculosis is correct, I have next to prove that an increase of local aeration of lung tissue, diseased or normal, is possible. I was first led to theorize on the possibilities of this being accomplished when I was called upon to treat a fractured rib in a person who, I had reason to believe, was phthisical. During the application of an ordinary adhesive plaster dressing for the immobilization of that side of the chest, there came to my mind the possibility of increased respiratory movements of the other—increased to such an extent as to be of advantage to the patient providing the dressing be properly applied at certain periods and in proper relation to the position and extent of the lesions within the pulmonary tissue just beneath.

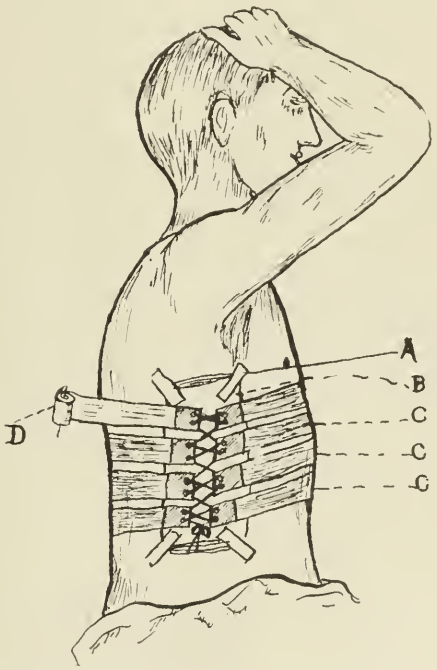

FIG. 2.—Diagram to explain how the half corset is applied. *A*.—Adhesive holding the pad in place. *B*.—Pad of gauze to keep laces from cutting the skin. *C*.—Strips of adhesive (as in Fig. 3) being applied.

My ideas as to a possible application of a method were so vague that some time elapsed before I actually attempted any such treatment. In my experiments there were so many points to keep in mind that I feel that I am but undertaking the study of the question.

In the first place the chest is capable of expansion in all directions. So that in certain persons, especially children and men, the diaphragmatic type of breathing is even more pronounced than are the costal movements. Next the tidal air is practically a constant—about 500 c.c. in the average

individual. And, last of these principles, we must recall that the apices of the lungs are least capable of expansion. Now suppose a question: If the diaphragmatic movements are limited, does the same 500 c.c. of air enter the lungs, do the movements of the chest wall increase in the other possible directions, and do the air cells of the apices get any of the extra supply of air? Other problems might follow in regard to the immobilization of one side of the chest, etc., but let us attempt to answer the first in a general way and then prove the answer. In doing so I shall state some of my observations and then give the opinions of others. Whether exactly the same 500 c.c. enters the lungs I cannot say, as I have not had access to a spirometre, but, judging from my other observations, I feel sure that the amount of tidal air is not materially decreased if other portions of the chest are capable of expansion. I am convinced, therefore, that this air goes into portions of the lung which hitherto have received much less aeration. In the table, I have set forth my results in regard to the possibilities of compensative increase of motion of portions of the chest left free from immobilization, being a measurement of the expansion observed fifteen minutes after the apparatus was applied, and as a part of a number of measurements in order to rule out any psychic factor. In all measurements a tape with a steel band was used and the subject was in a sitting position. The measurements are expressed in millimetres while the respiration rate appears just below, in each case, unlettered. The two persons available for these observations were physically sound in every way. "F" was a woman of thirty years and "M" a man of about twenty-five.

TABLE OF COMPENSATIVE RESPIRATORY MOVEMENTS AND RATES.

Where measured.		Normal.	Abdominal binder tightly applied.	Abdomen and pulmonary bases.	Half corset.
Level of third rib, circumference of chest	F	2 to 3 mm., 19.	5 to 7 mm., 19.	7 to 9 mm., 19.+	.....
	M	1 to 2 mm., 18.	4 to 6 mm., 19.	4 to 6 mm. 19+	.....
Level of third rib. Middle of sternum to spinous process of corresponding vertebra	F	½ to 2 mm., 19.	.....	.....	5 to 6.5 mm. 19.
	M	½ to 2 mm., 18.	.....	.....	4 to 6 mm., 18.

OPINIONS OF OTHERS IN REGARD TO COMPENSATORY RESPIRATION.

Unsatisfied with so incomplete and crude an experiment, I decided to obtain the views of well known physiologists upon the possibilities of compensatory breathing, and addressed the following questions:

1. Is there a compensatory respiration of part of the chest if one portion is out of commission, as in paralysis of one side, fixation of one side as in dressings for fractured ribs, etc.?

2. Is there a compensative costal respiration if the diaphragmatic type is limited—is amount of tidal air noticeably decreased by a tight abdominal binder or corset? Or do the increased expansions of the upper chest wall make up wholly or partially for the limitation of diaphragmatic descension?

The following opinions give some idea as to the views prevalent among prominent physiologists. I desire before quoting the opinions to thank those who have given me valuable information on the subject. All facts except those applying directly to this subject have been omitted:

Graham Lusk, Ph. D., New York city: "1. Either increased depth, increased rate, or both. 2. Volume about the same each minute. Rate may increase if depth is too shallow."

H. H. Hare, M. D., Philadelphia: "1. I believe that there is a compensatory respiration on the part of the chest when one side is out of commission. 2. That there is a compensatory costal respiration when diaphragmatic movement is impaired. In this compensatory costal respiration the upper part of the chest is actively involved."

G. N. Stewart, M. D., Cleveland: "1. Yes. 2. Yes, there is a compensatory costal respiration." To the latter portion of the second question Dr. Stewart answered, "Not necessarily. If the respiration is much hindered the tidal air (i. e., the amount of pulmonary ventilation with each breath) may be diminished, but this will be compensated for by increase in frequency."

Edward T. Reichert, M. D., Philadelphia: "The volume of complementary air, or, in other words, the volume that can be inspired after an ordinary respiration, ranges from about 1,500 to 3,000 cubic centimetres. This, of course, represents a reserve capacity and is from five to ten times the volume of tidal air in quiet breathing. Observations on man show that life may be maintained after paralysis of the diaphragm. In each case breathing is more frequent, but quiet. Bodily exertion causes respiratory distress."

Henry Sewall, M. D., Denver: "In answering a question in physiology one would like to give definite experimental data on which an opinion is founded. I think that such might be found without difficulty. Indeed, Hutchinson in his original article on the air capacities of the chest in Todd and Bowman's *Cyclopædia of Anatomy and Physiology* answers affirmatively, if I remember rightly your questions. 1. As to the first question, I would answer 'Yes.' In fact, the movements of the different parts of the respiratory apparatus are exceedingly sensitive to restraint, and I think it is generally admitted that when the amplitude of movement in one part is artificially lessened there is a compensatory increase of movement elsewhere. 2. There is undoubtedly a compensatory increase of costal respiration when the respiratory movement of the diaphragm is limited. Whether the amount of tidal air is noticeably decreased by a tight abdominal binder or corset, I do not know. Remember that the volume of tidal air in each respiration is only about 500 c.c. when the vital capacity

averages about 3,700 c.c. It would thus be easy for compensatory expansion of one or other part of the chest to keep up the full flow of tidal air even when there is very marked local restriction of movement. Thus a woman tightly laced suffers little diminution of her tidal air, by reason of excessive motion of the upper ribs. On the other hand it is obvious that the respiratory capacity in such a case would be much reduced, and as physiologically the even flow of tidal air is now and then increased by a deep breath, any restraint which permits the latter would seem to do harm."

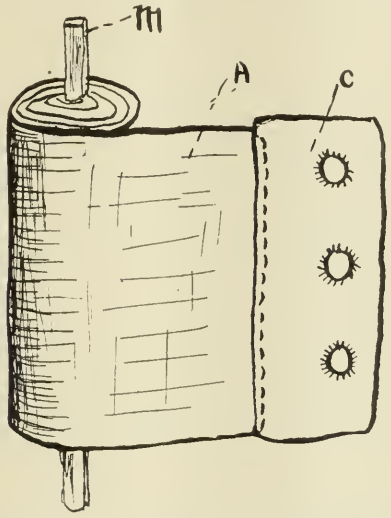

FIG. 3.—Adhesive spool used in half corset where it is of advantage to immobilize the chest during certain hours only. *M.*—Match stick. *A.*—Outer nonadhesive surface of the plaster. *C.*—Piece of heavy cotton goods with eyelets for lacing.

Aldred S. Warthin, M. D., Ann Arbor, Mich.: "In reply to your two questions, I should answer number one, by saying that from the average textbook one gathers the impression that there is a compensatory respiration in one thoracic half when the other is out of commission. That is, the expansion on the normal side is increased and the respiratory rate is increased in frequency. In regard to the second question, when the diaphragmatic type is limited, the accessory muscles are thrown into activity and the costal respiration is increased, the expansion and rate both being increased."

PRACTICAL APPLICATION OF SOME METHODS.

That some portions of the chest can be fixed, leaving other portions free to move, has been known for some time, and the principle has been applied practically in certain dressings for fractured ribs.

I have found adhesive plaster a most convenient aid. Suppose we wish to immobilize the lower right chest. Place the patient's back against the wall with his right palm on the top of his head. The adhesive bands should be tightened just at the end of a forced expiration. They should run from sternum to vertebræ, following the curve of the ribs. By allowing the plaster to extend a little past the sternum and spinous processes, a proper leverage may be obtained, while their encroachment upon the opposite side will not affect limitation of its motions. When the lowest border of this adhesive corset comes below the ensiform cartilage, abdominal breathing will be limited somewhat, but this is often of great advantage in properly aerating the opposite apex, especially if the costal type of breathing is not marked.

Although I have used continuous immobilization in some cases for periods of several days, I prefer to run no risks of weakening the sound lung by overendeavor. So that I have found it of advantage in many cases to apply temporary immobilization *i. e.*, during certain hours only, these depending upon many conditions as stage of the disease, weather conditions, etc. Although I would hesitate to lay down rules, I believe that the forenoon is usually the best time for the immobilization. In attempting temporary immobilization of portions of the chest with adhesive plaster there arise at once serious questions of expense in using so many plasters, and the time and trouble spent in their application and removal. To obviate these difficulties I have devised the lacing method shown in Figs. 1 and 2. Here the plasters are left in position, being tightened by lacing during certain hours. It is scarcely necessary to state that lacing should be done after a forced expiration, and that enough room should be left between the edges to provide for tight lacing.

For convenience, I have termed this apparatus the half corset. Unless reinforced by upper layers running at various angles the life of one of these half corsets is short, seldom over five days if laced very tightly several hours daily. So that, where any degree of permanency is desired, I prefer an apparatus such as shown in Fig. 3. Here strong ticking or canvas may be used. Such an apparatus cannot follow the ribs so perfectly but can accomplish quite as much, I believe, since it can limit the abdominal type of breathing.

And with this point in mind, I wish to emphasize the value of utilizing any apparatus which will limit diaphragmatic descension in any patient suffering from tuberculous involvement of both apices. This

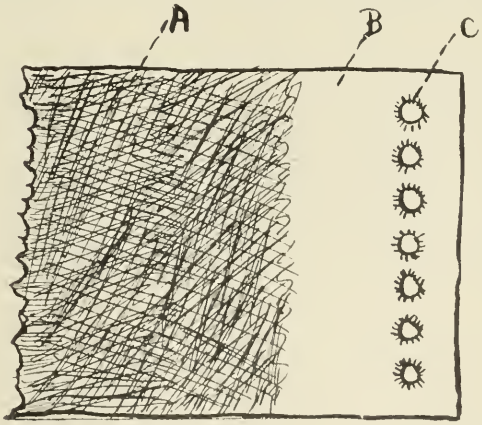

FIG. 4.—Piece of heavy ticking showing the surface which is placed next to the chest with emplastrum adhæsivum smeared on one end and eyelets made in the other end. This is merely a simplified method which may be substituted in Fig. 2 for the several small strips.

may be accomplished not only by strapping both bases, but by the abdominal binder or, at times in the bedridden, by an ice bag on the umbilicus. As I go into the subject, I am inclined more and more to limit abdominal movements in all of my cases, since strapping the base of a lung decreases the aeration

of its apex, and since these are generally the weakest points, the second one is often involved long before either base suffers.

All of this leads to questions which cannot be avoided but which I would hesitate to answer just now. Has the ordinary corset commonly worn by

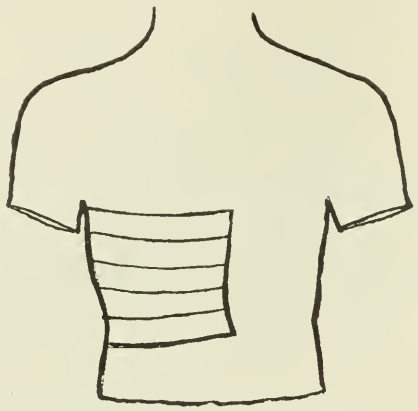

Fig. 5.—Continuous immobilization of one side of the chest with the greater part of the corresponding lung where the opposite lung is improperly aerated.

civilized woman a good or bad effect upon a tuberculous process already begun in an apex? Is the uncorseted woman or the woman who lays aside her corset weakened in her battle against the tubercle bacillus? Or has the wearer of the corset compensated already so far as she can, and is she an easy prey to the disease of civilization? In this connection I wish to call attention to the caution given previously by Dr. Sewall and which would apply to the corset worn continuously by a healthy woman: "The even flow of tidal air is now and then increased by a deep breath. Any restraint would seem to do harm."

The practical application of a therapeutic measure of this kind implies, for its success, more than ordinary diagnostic ability. Thus we must know how to hear the persistent râle, to measure the diaphragmatic excursion, to note the slightly diminished vesicular breath and the increased whispered voice, or to see the lagging even before the diminished expansion comes on. In other words, each tuberculous chest must become a study of itself and until the ordinary physician becomes so keen a diagnostician, I would suggest double strapping of the bases or abdominal binder during certain hours daily in all suspected incipient cases.

CASES UNDER STUDY.

I have at present a number of patients under observation on whom I shall report at some future date. Some of these have been under observation for many months, and though several have been dismissed from active treatment none have been pronounced cured. Upon some I have applied temporary or permanent half corsets and upon others the abdominal binder. I am using hygienic and medical treatment in each case.

JUST WHAT CAN BE EXPECTED FROM THE METHOD.

The tubercle bacillus is a sneak. The microorganisms of the acute infections attack boldly, are overcome at once or begin a desperate and aggressive battle. But the germ of consumption enters the lungs silently and lies in hiding seeking vantage ground, waiting and waiting; perhaps for days, perhaps for years. And, when it obtains a little foothold, it struggles to attain a greater one. And thus for months it may be slowly gaining ground without giving one symptom. And when it is discovered in its work it is often too late to overcome it.

I have scarcely hoped that my treatment might prove a specific for a single case of consumption and would at once define it as an aid to the fresh air treatment. At first it might appear difficult to see the need of such a helper. But I think it necessary to quote only a few lines from an article on Mistakes and Misconceptions with Regard to the Modern Treatment of Tuberculosis, by J. W. Pettit, and which appeared in the January number of the *Illinois Medical Journal:* "The disease is chronic, and the treatment consequently a long one. . . . Tuberculosis, even in its earliest stage, is not susceptible of a cure under most ideal conditions within a few weeks. An incipient lesion requires for its eradication not less than two years, although the patient may to all appearances be perfectly restored to health in a shorter time."

So that anything which would shorten the treatment would prove a valuable aid and in some cases where the strictest hygienic measures cannot be carried out, may take the place of the great altitude or other respiratory stimulants. It is especially desirable that the patient have an abundance of fresh air during the hours of immobilization of portions of the trunk.

Naturally the method presupposes a fairly good resistant power on the part of the patient—that is, it assumes certain intrinsic factors. Thus negroes and those of the *habitus phthisicus* can scarcely expect so much from the treatment. Also influences

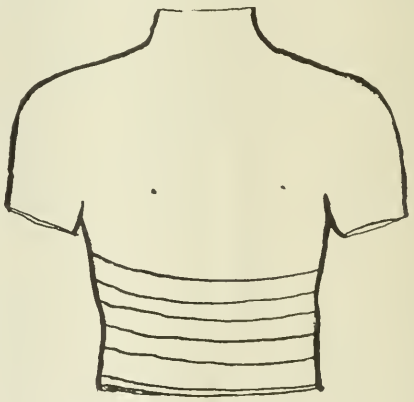

Fig. 6.—Abdominal binder to limit the diaphragmatic descent with compensating aeration of both apices.

diminishing the proper amount of tidal air as the presence of enlarged bronchial lymph glands, bronchiectasis, etc., or influences retarding the circulation as valvular lesions, etc., cannot readily be overcome by any mechanical treatment.

I am a bit doubtful about the therapeutic value of mercury in phthisis, though I am trying it in several cases. Creosote I value as a respiratory stimulant only when inhaled. I have found no use for the hypophosphites, and have failed to see the advantages, practical or theoretical, of codliver oil emulsions over a tablespoon of rich cream. A

eucalyptus laden atmosphere, a pine forest camp, and a great altitude aid in the treatment of pulmonary tuberculosis, not because of any specific action upon the disease process, but merely because they stimulate increased respiratory movements—in other words, they bring fresh air and good blood to the points where they are most needed.

In this preliminary report, I have given a somewhat extended theoretical account of my subject and offer but little actual experience. If my observations are of value, and I believe they will be, I shall report them in the early fall. However, the time is ripe just now for the study of tuberculosis and a hint in one direction may bring out great truths later. I wish to enter a plea that others investigate along these lines—investigate thoroughly and conscientiously—that we may, eventually, by critical observation, separate the wheat from the chaff.

In conclusion, I desire to thank my brother, Dr. E. G. C. Williams, for the photograph and drawings, also Dr. J. P. McMurrich and Dr. W. H. Howell for their kindly assistance in collecting material for this article.

OSTEOMYELITIS OF THE TEMPORAL BONE.

By Emil Amberg, M. D.,
Detroit.

From Dr. E. T. M. I received the following history, which I give in part:

Patient, P. A., thirty-nine years, laborer, of German extraction, large, strong, muscular, and had been always healthy since infancy.

Previous history. At age of six months he had had scarlet fever of virulent type at which time acute otitis media of both ears developed, and the ears discharged ever since.

Family history, negative.

Examination and present condition on first day of presentation, November 29, 1909. Left auricle slightly more prominent than right. Foul discharge from both ears. Pain only in left ear. Right external auditory canal obstructed by substance that proved to be an artificial ear drum. After syringing away a thick, ropy, viscid excretion, no tympanic contents were found. An artificial ear drum was also found in the left canal bathed in thick, creamy pus. The fundus of the canal could not be seen on account of collapse from a diffuse inflammation of the soft tissues. The patient had worn these artificial ear drums for about a year. There was no tenderness over the antrum or mastoid tip. Pain was deep seated, and tenderness was elicited only on movement of auricle or on pressure over tragus and under external auditory meatus.

For two weeks general and local treatment provided no relief, and operation was advised but refused. Relief to some extent was afforded through fistulous opening in the posterior wall of the canal. This left no doubt of mastoid involvement. Soon afterward, however, tenderness was elicited upon pressure over the antrum, emissory mastoid vein, and mastoid tip. Two weeks later, December 27, 1909, operation was urged and finally accepted by the patient. His general condition at this time caused the family and friends much anxiety. He had lost some forty or fifty pounds. His manner had changed and in what little sleep he had he would groan. Headache referred to different locations at different times was a feature. Pulse had ranged from 82 to 88 and temperature from 99° to 100° F. No chills or chilly feelings. No sweating. Patient was sent to the hospital, and on December 28, 1909, a simple mastoid operation was performed, though it was the intention at the start to make a radical operation. Very little pus was encountered, and that in a location corresponding to about the course the fistula must have taken. The pneumatic cells of the mastoid process proper, which it had been expected would be broken down, were quite obliterated, eburnation probably having taken place. Some difficulty was encountered upon entering the antrum and making a free opening, the bone being ivorylike. Sequestra of bone were removed from the posterior wall of the external auditory canal, and the necrotic process followed inwardly for perhaps three quarters of the length of the canal. Necrosis had involved the major portion of the outer wall of the aditus ad antrum, and all dead bone was removed.

Ten weeks after operation, the fistulous opening and postauricular wound had healed. The pain ceased after operation, though he complained of some temporal and left supraorbital headache at times, and the whole left side of the head was bulging quite noticeably. The collapse of the external auditory canal remained, making it difficult to syringe the middle ear cavity, which never ceased discharging. Patient gained in weight rapidly, but the otorrhœa did not improve and he complained some of tinnitus aurium, so a radical operation was advised, which was performed fourteen weeks after the first operation.

When I saw the patient, on April 3, 1910, the left meatus was very narrow and funnel shaped. There was some discharge in the depth. A radical operation was advised and performed by me on April 8th in Grace Hospital. An incision was made through the scar of the previous operation, about one and one half cm. behind the insertion of the auricle. Upon retraction of the skin and of the periosteum a loose piece of the outer plate of about from 10 to 13 mm., according to my memory, with partly ragged edges, was found. (Specimen not saved.) The antrum was laid open freely. A sequestrum was found backward of the same, and another in place of the bridge to the aditus ad antrum. In the anterior upper edge of the wound, representing the skin posteriorly to the auricle, a hard body was felt which, upon examination, proved to be a sequestrum, triangular in shape, the sides being each, by measurement, about 2 cm. long, the thickness at its thickest portion about 8 mm. This piece shows practically no rough edges. In the extreme upper edge of the wound, about perpendicular above the external auditory canal, part of the cortex was found so soft that it could be broken off by the fingers. An ordinary plastic operation was done, one flap stitched upward, the other downward. The wound was partly closed by Michael's clamps, leaving a temporary opening in the upper and a temporary smaller one in the lower portion for drainage. After the operation the patient became free of the dizzy spells of which he complained before.

Sequestra of bone.

To what extent the second operation will be a lasting success can only be seen in the future.[1] It is impossible to state the extent of the cells in the temporal bone and their infection. Cells of the temporal bone may be found, as Politzer remarks, directly connected with pneumatic cells of the oc-

[1] When last seen, the ear appeared dry.

cipital bone. Dr. Barnhill, in the *Annals of Otology*, March, 1910, on page 115, reports a specimen of Dr. Wales in which there seems to exist direct communication between the cells of the temporal bone and those of the sphenoid and occipital bone. When we further take into consideration, as I have stated some time ago, that there are eighteen cell groups in the temporal bone, the possible extent of an affection as the one described here, becomes apparent.

I may add that lues is denied by the patient.

In conclusion I should like again to call attention to the fact that this patient carried in his meatus an artificial drum membrane, and it cannot be too strongly emphasized that the indiscriminate use of such a device in a discharging ear is fraught with no little danger.

270 Woodward Avenue.

A STUDY OF FUNCTIONAL EXERCISES IN SOME NERVOUS DISEASES.

By William Burdick, M. D.,
Philadelphia.

As in medicine the nervous system is a comparatively unexplored country, so in physical education exercise in relation to nervous diseases is a dark continent. Dr. Hartwell in a monograph in 1898 described the vast extent of the land and brought back some of its fruits, but the world largely preferred to accept the stories of the difficulties and started on a forty years' wandering in the wilderness. Fortunately, this attitude is changing. All scientists are studying the relation of nerve and muscle. You may recall Professor Ludwig's advice to Dr. G. Stanley Hall to study the gastrocnemius muscle of the frog, with the result that he says he is still studying it. Textbooks are devoting perhaps twenty per cent. of their space to this subject. Students are trying to learn more about it, and spend a quarter of their laboratory time in studying its workings. The medical world is realizing more and more its need of physical training in its therapeutics. Nowhere is this more needed than in the treatment of some nervous diseases. But, alas, even empirical knowledge of this is scanty. Many new and complicated series of exercises are being devised for the strong, and wisely; but pathological conditions also ought to be considered. The published work of Dr. H. S. Frenkel has started much activity, but think of the rich ground lying fallow for the plows.

Definitions of a few terms are necessary in the consideration of the subject. By "functional exercises" I mean the accomplishment of acts that are done by a normal individual in his daily life. These would differ somewhat for each individual according to his occupation; for example, I would be satisfied to teach a middle aged woman to walk again, but would aim to teach the carpenter to walk on inclined surfaces so that he could eventually earn a partial living. Such exercises take the place of the artificial ones usual in gymnasia but are performed regularly and systematically as any gymnastic series. The idea is always that the patient shall regain or keep up functional activity and be able to make coordinated movements. These latter are movements in which "all muscles come into no greater or less activity than is necessary; where each individual muscle works its own part only, when all involved muscles contract in their proper order." This lack of loss of coordinated motion can be greatly helped by persistent, patient practising of the whole or of analyzed parts of a normal act. Many are unable to walk in a normal manner, not that they have not the power but because they have ataxia. I use the term ataxia to mean the inability to perform the ordinary movements made by a normal individual in the normal manner because he does not know how to do so. That is, ataxia is incoordination. The first time we try a new game, such as billiards, we are painfully aware of our ataxia. It is not that we do not possess the power but that our nerves and muscles are not properly trained. Thus we see ataxia is a relative term, as is the word "normal." It is fair to apply "normal" to the acts performed by the mass of mankind whom we meet and study, and not to the acts of any one individual. This study must be along the lines of the work done by Marey, Duchenne, and others, and must be supplemented by a knowledge of bodily mechanics and applied anatomy. For example, in running, many an individual will turn out his feet whereas we know from the mechanics of the act that he loses several inches at each step. From such knowledge we can correct not only a man's ataxia but also add to his functions for we economize his efforts.

The functional exercises I use are based upon Frenkel's, more often modified and simplified than made more complex. In most cases locomotion has been the end desired, but to bring this about has required the learning of details one has probably never considered as entering into walking.

One does not realize how much he uses his eyes even in the fundamental standing position; let him stand in Romberg's position and then attempt quickly to raise one foot and stand on the other. It is usually rather difficult, but practice, of course, will soon make it easy. Take for instance the case of a woman with hysteria and multiple sclerosis, who, when I started with her, could not even sit in a chair without support. I had to reduce movement to its lowest terms. Unable at first to lift one arm from her side without falling in the opposite direction, her first exercises were merely arm abductions. Next she had head rotations; later the two were combined. It took months of constructive work before she could stand. She recovered and later was well enough to marry.

All exercises must be purposive, there must be a definite goal to be reached and the patient must be conscious of having reached it. In fact, the ataxic acts of the tabetic are purposeful from the point of view of his knowledge. The reflex arcs being destroyed by the disease he actually does not know how to do things better. His way seems the only sure and safe way open to him. He kept stubbing his toe as he swung the leg forward as a pendulum because he did not realize that the knee ought to flex. Then he tried to bring the foot forward in an abducted position. By throwing the leg he made up the time lost and thought no more of it. As a result his adductors weakened and he walked worse and worse. Hyperextension of the joints and many other faults of the ataxic can be explained on me-

chanical grounds. If an attempt is made to teach the brain and nerves how to act by frequently repeated exercises the patient eventually makes each act a new habit. The hope is that by strict attention the act may soon become unconscious so that more difficult things can be learned.

As in all education, we appeal to all the senses; eye, ear, touch, and muscle sense, trying all the time to lessen the former and leave the work to the fundamental tactile and muscle sense. For example, the frequency of diplopia in tabes may be partly due to strain of the eye muscles. I have seen this clear up as the patient gained motor control. One tabetic, in fact, was able to walk blindfolded after six months' practice. To bring about this effect the eyes were cut out of action as soon as possible by having the patient stop watching his feet and look at the things round about him as he walked. I doubt not that music would be of value in its suggestion to the ear as to when the foot should be advanced. In one case of paralysis agitans I found that walking was easier for the patient when I gave him the rhythm by walking with him.

The exercises should start with those acts that are diagnostic of ataxia, as the way to arise from a chair or how to sit down without falling into the seat. Here we explain the mechanisms in order to make clear the difficulties. In a lesson or two he understands his mistakes and corrects them. Because we do there things unconsciously, we deem them of no value. These patients, however, will soon prove to you the value of the commonplace. Teach a few things such as how to pick up things from the floor without falling, and the psychic effect upon your future efforts will be immense. The man who learns to move the hitherto stiff neck by being told to look at a spot you see on the ceiling will be grateful, but if he thereby learns to drink water because thus his œsophagus is straightened he will be a far more efficient pupil. Tell him to watch his fingers, and he may deceive the next one who tries his coordination by this test.

The greatest danger is of causing fatigue of the nerves. The amount of dosage is different in every case and even must vary with the same person according to his condition. The exercise must stop short of fatigue or you defeat your own ends. The latter must be eternally watched for. The layman has no right to teach these things without constant consultation with the physician—for conditions of heart and vessels may contraindicate such treatment. The pulse and respiration are indices of this fatigue. The effort should be to get the maximum of response to the minimum of stimulus, especially where the trouble is sensory in origin. Failure to get results are due to disregard of this point. That, in addition to the lack of definite goal for each act, is the reason that Swedish exercises are not adapted for most nervous affections.

Successful results, will, of course, depend upon the perseverance, intelligence, and condition of the patient. Still the personality of the teacher is of prime importance. He must constantly note slight improvement and explain it to the patient. The exercises selected must be varied and above all must not be too difficult. Especially care must be taken that the patient feels safe and is free from the fear of falling. To best accomplish all this requires that the teacher knows some psychology and especially applied anatomy; besides he should have some theories as to the underlying pathological conditions.

No physician thinks of treating a case without considering the physiology and pathology of the trouble, so no teacher will intelligently use functional exercises without regarding the probable lesion. The theory upon which I work is that the frequently repeated exercises done voluntarily teach the cortex of the brain to control and direct the act. In tabes we use the few sensory nerves that are left as the fuse to set off the explosion. Consequently the earlier we treat a case the better it will be for the patient. Although later we can do wonderful things for him, the one wire can never do the work of the cable. In cases in which the lesion is of the motor origin we succeed probably by getting some of the smaller nonfunctionating cells to do the work of the diseased ones. In other cases where the reflexes are either not inhibited or are uncontrolled, as in combined sclerosis, we teach other cells to do the work of those that have ceased working. When the reflexes are lost and the connections in the brain are nonexisting or are temporarily nonfunctionating, we probably make new paths for the activity, as in multiple neuritis. With the great number of cells in the nervous system which seem to be small and nonfunctionating it does not appear to be extravagant to believe that we may get some of these working for us as a result of functional demand.

We hasten to watch and direct the daily life and drug the fatal heart case but allow these far more favorable cases of nervous destruction to go from bad to worse without practically any attempt to "ease their latter days." It takes an immense amount of time and patience to treat such a case but in productiveness and ability to do for themselves these cases are well worth more of our attention. Dr. James J. Putnam, of Harvard Medical School, says: "I am encouraged to recommend suitable gymnastic treatment when no marked incoordination is present. The restoration of functional activity is the end to be sought at all hazards." The surgeon does not hesitate to operate upon incurable patients to prolong life and make it more easy. Yet the tendency has been to say, The patient has an incurable malady and let him go from bad to worse.

Aside from the value to the patient this brings its reward to the worker. The study of these abnormal movements has the same value as that of microscopical pathology. We really must analyze all of our daily acts and be able also to synthesize them. It requires an accurate and an almost unceasing regard for mechanical laws and anatomical arrangements. All things help in the solution, whether it is biology telling us to expect the return of function to the thenar muscles of the hand last, or psychology admonishing us to keep the attention fixed upon a desired end. From this study we will learn, too, the physiological way of doing things and will start a "circle," not vicious, but extremely useful in the treatment of future cases. As byproducts I have found some very suggestive things,—vasomotor changes, as perspiration returning to parts

after relaxation of muscles was regained by nervous control; areas of anæsthesia disappearing from other parts of the body apparently not related to the parts exercised (this seems connected with the useless contortions of the face in intense exertion); better sleep following motor control; and so forth.

This general type of treatment by exercise has been used by me in twenty cases, which include seven of tabetic ataxia, three of paralysis agitans, two of combined sclerosis, one of multiple sclerosis, two of hemiplegia, two of anterior poliomyelitis, one of multiple neuritis, one of diffuse degeneration of the spinal cord, and two of spinal cord lesions undiagnosticated. My experience leads me to the following conclusions as to the value and use of them: First, in no case has there been a failure to better the difficulties of movement. Though the betterment may have been only slight, yet it was such as to make me believe more and more in the possibilities of exercise. Among the possibilities open I have succeeded in restoring lost functions. A tabetic with the usual degree of difficulty has regained the power of locomotion so well as to have been able to walk the stringers of the third story of a building in course of construction for which he was the contractor. By teaching the proper mechanical relations of knee, ankle, and foot, I have overcome the toe drop in multiple neuritis within a month. Second, better coordination can be secured. A case of Parkinson's disease changed from the festinating gait to one in which the patient walked upon the soles of his feet. Third, exercise will, if unable to overcome the effects of the lesion, be able to teach other muscles to do the work vicariously. One young man who had lost control of the peroneal group is teaching the calf muscles to do their work. Fourth, they apparently retard further progress of the disease. I have in mind one case of tabes which, though the patient persistently overworked his remaining nerves, personally framed and built nine houses in one year.

I want, in conclusion, to give you the result of three cases.

Case I. The patient was a man, thirty-five years old, a contractor and builder. He had begun to stay in the house because locomotion was difficult. At the end of four months he shaved himself standing up before the glass. Whereas before he was in a state of tonic contraction, he could relax all the muscles of his body and only occasionally had any anæsthesia. His locomotion became steady; he could walk across the stringers two inches wide, sixteen inches apart, upon the third floor of a new building with no fear at all. When we started this method of exercising, if his leg fell out of bed, he never knew it to be outside, now, standing he can tell the exact relations as to direction and position of both feet. The pupils dilate and double vision has largely disappeared, and, what is apparently unusual, the dark has little effect upon his movements, for he joined the Masons, where he had to be blindfolded for one half hour or more.

Case II. Another case is a captain of yachts, N. P., thirty-two years old. He had been confined to bed with vertigo, had fallen several times, and walked with characteristic swinging, shuffling gait. Almost all of the time he used a cane and even then he could hardly progress. The case was not very far advanced and I suppose some might say he had not yet become tabetic as the patellar reflex was present. Still all the symptoms of anæsthesia, in feet and legs, ulnar sides, of hands and weak knees, were present. Also the pupils had not become fixed, but vertigo and double vision were present. The Romberg symptom was plainly evident and already all muscular coordinations were disturbed; e. g., getting out of chair, walking up a curbing, upon plank walks, etc. Six months later the attending physician said, I need not continue the instruction. The patient walked normally even with his eyes closed. His endurance was shown by a five mile walk. The symptoms of progress has ceased, though six years later he died from syphilitic sequelæ.

Case III. G. K., forty-six years, iron worker, recently operated upon for spasticity by a resection of the posterior nerve roots. At the end of three months' practice he had learned to walk six inch steps unsupported and unassisted. He could stand alone though this was impossible since the accident six years before. And, at present he is walking up and down stairs with the assistance of a cane and the railing.

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REPORT OF A FATAL CASE OF TOXIC PYELITIS IN INFANCY.

By Selian Neuhof, M. D.,
New York.

The history of this case is as follows:

Baby B., female, eighteen months old. Mother of child operated upon three and a half years ago for sterility. Without discoverable cause, severe double pyelitis developed with fever lasting about three weeks. During pregnancy with this child, fifth month, there was another mild attack of left sided pyelitis lasting one week. Baby was only child; normal development, weight, and dentition; anæmic; tendency to bronchitis with fever usually lasting two or three days. No adenoids or enlarged tonsils.

Present illness: September 22nd: Ill three days; bronchitis and rise of temperature; urine examined and found normal.

November 2nd: History of illness for two days; fever; restless at night; no vomiting; no diarrhœa; no cough; temperature 104° F.; slight redness of right tonsil, no adenitis; examination of other organs negative.

November 3rd: Temperature 102° F. Very few spots on right tonsil; child felt better.

November 4th: Temperature 105° F.; restless at night; occasional dry cough; throat clear; no splenic enlargement; no coryza; lungs negative; bowels normal; respiration 40; pulse 150. Blood contained no plasmodia. Baby quite pale, looked collapsed.

November 5th: Restless; infrequent dry cough. Stomatitic ulcers on lower lip; furry ulcer on tongue. Child recognized surroundings; played occasionally, cried when taken up. No signs of meningitis. Urinated freely and without pain.

November 6th: Child very restless, delirious most of the time, picking at bed clothes. Hands and legs cold; no marked chill. Pulse 150, regular. Examination of lungs, heart, and abdomen negative. Frequent attacks of retching, child often waking with these attacks. Tongue moderately coated. Face flushed.

November 8th: Restless night. During the afternoon child suddenly quiet and apathetic; frequent retching; breathing shallow. Some retraction of head and sensitiveness upon occipital pressure. Knee reflex normal. No Kernig or Babinski sign. Child pale with waxen facies; flush on one cheek. Throat normal. Blood count: White blood cells 28,600, polynuclears sixty-eight per cent. Ears normal. Pupils reacted normally and quickly. No enlarged mesenteric glands. Spleen not palpable. Bowels normal. Urinated frequently; no pain; passed large quantities of urine. Kidneys not palpable. Microscopical examination of urine showed very many pus and small round epithelial cells, very few hyaline casts. Spinal fluid under pressure; quite clear; seven and one half cubic centimetres withdrawn; chemically normal; microscopically, contained no cellular elements; no bacterial growth on culture media. Moro's test for tuberculosis was negative.

November 9th: Urine turbid; contained flocculi consisting entirely of pus. Large sediment of pus in centrifugal tube. Sterile catheterized specimen, contained pus; faintly acid; specific gravity 1,020; numerous pus cells; very few hyaline casts; few epithelial cells; no tubercle or colon bacilli; no crystals; no sugar; albumin + (due to pus). Pupils somewhat unequal. Sensorium much clearer.

November 10th: No gagging or retching; moderately comatose; aphthæ on tongue and lips clearing up; hands and feet cool. Legs rigid. Moderate retraction of head. No opisthotonus. No Kernig or Babinski sign.

November 11th: Abdomen distended; stomach dilated, its lower border visible on respiration (paralytic distension); constant hiccough (partly relieved by introducing rectal tube). Urine—Large sediment; supernatant fluid contained albumin (strong trace); one granular cast, and many large squamous (bladder) epithelial cells (secondary bladder infection).

November 12th and 13th: Pupils equal and reacted to light; eyes staring; conjunctival reflexes pronounced and active. Child moved head. Abdomen not distended. Ulcers on tongue clearing up. Bacteriological examination of smear from ulcers of tongue and mouth showed the usual bacterial flora of the buccal cavity. Urine—Trace albumin; light in color; very little sediment; no casts; several caudate cells (from renal pelvis?); many leucocytes and bladder epithelia, though much less than in previous specimen; very many calcium oxalate crystals. Remission of symptoms with lowered temperature (see chart). Bacteriological examination of urine negative. Urine streaked on blood plate (for influenza bacillus) also negative. Spinal fluid again withdrawn, was normal.

November 14th: Temperature normal; pupils equal and reacted to light. Bowels normal. Infant swallowed food fairly well. Still stuporous. Vaginal discharge, mucopus.

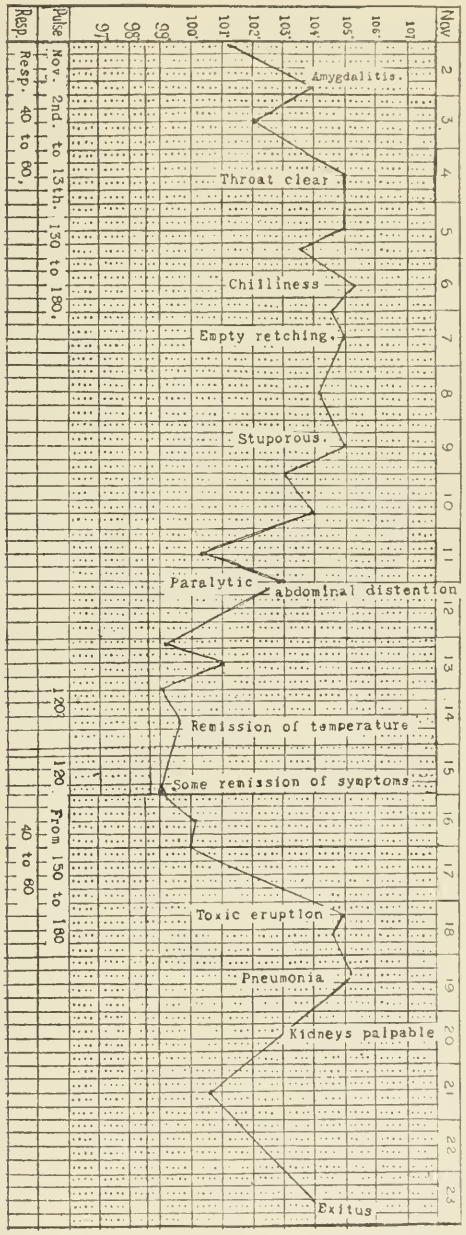
November 16th and 17th: Hands and feet cold; no chills. Urine—Sediment of one half inch in centrifugal tube, containing very many bladder epithelial cells (round and large squamous) and some pus cells; no casts.

November 18th: Sharp rise of temperature. Sensorium the same. Small punctate and papulosquamous rash over whole body and face (toxic eruption).

November 20th: Eruption disappearing and skin desquamating in fine scales. Abdomen quite flaccid. Kidneys were palpable for the first time; lower pole of right kidney barely palpable; left kidney: approximately its lower half can be felt; was enlarged and somewhat movable; no pain or tenderness on pressure. Eye grounds showed some congestion of discs; no optic neuritis. Urine—On standing one eighth of its bulk was sediment, consisting almost entirely of pus.

November 21st: Short explosive cough.

November 22nd: Examination of chest showed area of pneumonia in right upper lobe. Attempt at aspiration of blood from vein for blood culture was unsuccessful because of collapsed state of circulation. Cerebrospinal fluid withdrawn, was normal.



November 23rd: General convulsions for several hours; death.

The interesting features of this case and its comparison with others reported in the literature can be most profitably discussed under several headings.

I. *Ætiology:* With but few exceptions acute infantile pyelitis is produced by infections of the bacillus coli communis (Baginsky (1), Escherich (2), Finkelstein (3), Abt (4), Morse (5)). Most cases occur in females, the colon bacillus finding its way

mechanically from rectal discharge and stool into the vagina, urethra, bladder, and finally the renal pelvis (ascending type). According to others, bacilli can also find their way through the rectum and perirectal tissue directly into the bladder (Finkelstein (3)), though to my knowledge bacilli have never been discovered in the tissue between the bladder and rectum. There is, however, experimental evidence to substantiate the latter theory. Wreden (6) has shown that the same organisms used for infection of experimental wounds of the rectum (of rabbits) are found in the bladder. Foreign bodies (stones, parasites—Monti (7), and medical irritants also cause acute pyelitis. Many authors mention eruptive diseases as possible ætiological factors, though I have not been able to trace any reported case to that cause. As to hematogenous infections, von Reckinghausen, many years ago, proved that pyelonephritis could be so produced. Other writers (Finkelstein, Holt (8), J. Thomson (9)) describe cases due to toxæmia, though these are extremely rare. Holt ascribes two of his cases as infection through the blood channels. Bosanquet (10) reports pyelitis in an infant with an antecedent red and inflamed throat. In my case the pyelitis began with a distinct attack of tonsillitis, apparently mild; in two days the few spots in the throat had disappeared and the high initial temperature (104° F.) had dropped to 102° F. There had been no antecedent urinary trouble. The urine examination two weeks previous showed normal urine. It is of interest to again mention that the mother had had two distinct attacks of pyelitis, the last one during her pregnancy with this child. In what manner such an infection in the mother can involve a similar structure in the offspring, I do not know; it appears to me, however, more than mere coincidence that the kidneys of the child should be so promptly affected by so mild an initial tonsillitis.

II. *Course of the disease:* Most cases begin acutely, acompanied by temperature ranging from 104° to 106° F., occasionally ushered in by chilliness or distinct chills, (J. Ritchie (11), J. Thomson, Abt). There are often one or more relapses; cases with three or even four relapses have been described (Wolfstein (12)). Some cases last only a few days and then remain afebrile. In some instances the fever lasts as long as four months (Duenas (13)). When the rise of temperature is of more than one week's duration, it is usually irregular, with daily remissions. Sometimes the temperature is of a septic type. Occasionally the febrile course is similar to that of typhoid (Hartwig (14)). The case here presented began with acute onset, with chilliness and coldness of the extremities lasting for hours. There was no distinct chill. There was a single marked remission in temperature and a partial remission in symptoms. A careful study of the urine showed no connection between the rise of temperature and the varying degrees of pyuria.

III. *Cerebral symptoms:* Excepting the usual cerebral symptoms accompanying hyperpyrexia in children, very few cases have been described in which there were pronounced meningeal symptoms (Freeman (15), Morse (5)). Though the focal signs of meningitis were missing in this patient, and though the cerebrospinal fluid was normal in all respects, there were many evident symptoms of cerebral compression—marked and continued rigidity of head and neck, forcible retching, constant stupor, irregular flushing of face, paretic condition of stomach and intestine. Quincke (16) long ago described cases of (noninflammatory?) serous meningitis (also called internal or angioneurotic hydrocephalus) either as a clinical entity or as a complication of infectious diseases, usually affecting the ventricular ependyma, in which aspirated spinal fluid did not differ from the normal, and in which many or all symptoms of active inflammatory meningitis were present. Macroscopically, the brain and meninges may appear normal; microscopically, there is more or less marked cellular infiltration along the blood-vessels (Schultze (17)). The limited post mortem examination obtained in my case showed no gross lesions in the brain or meninges. Very probably, however, the brain symptoms were caused by toxic serous meningitis. Uræmia as a cause of the cerebral condition was excluded by the large amount and the character of the urine passed, and by the absence of œdema.

IV. *Prognosis:* Very few fatal cases have been reported (Finkelstein (3), Abt (4), Goeppert (18)). Many writers state that pyelitis of infancy, when properly diagnosticated and treated, terminates favorably. Even in the severer forms (for example, in those cases having high fever and pyuria for several weeks) the prognosis is good. The case under discussion shows, however, that when the symptoms are severe at the onset and when meningeal symptoms appear early in the course of the disease, we are probably dealing with a septic type of pyelitis and should, accordingly, be guarded in our prognosis. The presence of such septic symptoms is of greater significance in the prognosis than the mere duration of the disease.

V. *Palpation of the kidneys:* Very few writers describe palpable kidneys in pyelitis of infancy. In the case here reported the kidneys were not palpable until they had become enlarged and until the child had become considerably emaciated and the abdomen flaccid (making palpation easy). Another point of interest in this connection was the fact that the kidneys were not only palpable but had also prolapsed and were slightly movable (particularly the left kidney). The descensus of the organs seems to have been mainly caused by the rapid and marked loss of circumrenal fat (produced by the progressive toxæmia) and was but another sign of the extreme emaciation present. Views concerning tenderness on renal palpation are at variance. Doubtless the age of these little patients, the high temperature usually present, and the variations in the local inflammatory condition in the pelvis and kidney account for these varying opinions. In the patient here described tenderness was absent.

VI. *Urine:* The urine is usually acid. What is pathognomonic of the disease is the presence of pus and epithelium from the renal pelvis. The pus and epithelium may appear in the form of small flocculi and shreds or the whole urine may be turbid. Upon standing the sediment may form—in rare instances —as much as one eighth of the total amount of urine. Of course it is necessary to distinguish the various sources of the epithelium. When epithelial

cells of the caudate type are present, one may feel fairly certain that their origin is the renal pelvis. In addition, a careful search will sometimes reveal some—if only a very few—casts, usually hyaline or slightly granular. For bacterial or careful microscopical examination a sterile catheterized specimen is necessary. For ordinary purposes the urine in the female may be obtained by placing the baby on an ordinary deep platter. In this case the bladder was secondarily involved, as evidenced by urinary examinations showing very numerous broad, squamous (bladder) epithelial cells not previously present. Naturally the genitalia must also be excluded as the cause of the pyuria.

VII. *Treatment:* In most cases reported urinary antiseptics—urotropin or alkalis—were used. In my patient, besides hygiene and nursing, main reliance was placed upon urotropin and symptomatic treatment. Urotropin had no effect upon the character of the urine or the course of the symptoms. The absence of microorganisms in the urine and spinal fluid (blood could not be aspirated) excluded the application of any antibacterial therapy. Digitalis and other heart stimulants were exhibited when necessary. Expectorants and stimulation were given during the pneumonia. Ice bag to the head and lumbar punctures were used to control the meningeal symptoms. For the continued retching, bromides and chloral were given, feeding *per os* was stopped, and rectal (Murphy) infusions were resorted to.

I am indebted to Dr. Eli Moschkowitz, pathologist of Beth Israel Hospital, for his interest in this case and for his careful study of the specimens submitted to him for examination. His report follows:

Microscopical examination: Lungs: Section from the pneumonic area showed the alveoli filled with pus and round cells, the nuclei of many of which were in a state of karyorrhexia. The epithelium of the smaller bronchi was desquamated and the lumen of the bronchus was filled with pus cells. The pleura was free from any signs of inflammation.

Heart muscle: Normal.

Liver: The trabeculæ and their component cells were swollen. The cells were granular and the nuclei stain feebly. There was a moderate grade of fatty degeneration. The capsules of Glisson were normal.

Spleen, pancreas, mesenteric lymph nodes, stomach, and intestines: Normal.

Kidneys: The cells of the convoluted tubules were considerably swollen and markedly granular, and the nuclei stained faintly. The lumen of these tubules contained granular material and in places one or more desquamated epithelial cells. The glomeruli were very cellular, but otherwise appeared normal. The cells of the loops of Henle and of the straight and collecting tubules were normal. The intertubular capillaries were notably dilated and filled with blood. In places, the connective tissue stroma of the cortex showed small areas of round celled infiltration. There were, however, no evidences of desquamation.

The epithelium of the pelvis was in many places desquamated. The epithelial cells were moderately swollen. There was moderate round cell infiltration in the subepithelial connective tissue especially around the blood-vessels. The latter were slightly dilated.

Bladder: The epithelium was well preserved. There were a number of round cell areas in the subepithelial connective tissue.

Brain: Cortex normal.

Microscopic diagnosis: Bronchopneumonia; acute parenchymatous hepatitis with fatty degeneration; acute parenchymatous nephritis; pyelitis.

I wish to thank Dr. L. G. Kaempfer for his bacteriological examinations of the various specimens submitted to him.

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THE TREATMENT OF PULMONARY TUBERCULOSIS.*

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In the various papers that I have read before this association, the State society, the local county society, and other societies, on the subject of tuberculosis, I have purposely refrained from discussing any phase of the treatment of this disease until from an extended experience I could speak with authority. In this I have been actuated by several reasons, chief of which has been the idea prevailing so extensively among the laity, and in many sections of the country permeating the profession largely, and in some instances amounting to direct antagonism—the idea that we have no specific treatment for tuberculosis. It is an idea that should have been laid aside long ago, but like Banquo's ghost persists in bobbing up in some quarters; I wish to state at the beginning of this paper that when I speak of the treatment of cases of pulmonary tuberculosis I mean the treatment of those cases that are treatable and not those that have already passed beyond the power of human skill to aid, and are simply notching time until the close of the last act in the tragedy of human life—death.

There are few diseases when treated in the right way and at the right time that yield more gratify-

*Read before the Fifth District Medical Association of Texas, at San Antonio, March 22, 1910.

ing results. Physicians are often surprised at the readiness and the rapidity with which patients respond to proper treatment. The idea that nothing can be done to check the extension of the tuberculous process arises chiefly from two facts: First, the failure to recognize the disease before it had practically exhausted the vitality of the patient; and, secondly, because we, as physicians, have been content to rely entirely too much upon drugs to combat the inroads of the disease. It will be a happy day in medicine when physicians learn to rely upon Nature more and drugs less. There are few diseases in which drugging has a more distinctly pernicious effect and in which it actually more frequently occurs. To prescribe some drug or combination of drugs for every symptom is not only illogical and unscientific but may be distinctly harmful. To prescribe an opiate as is frequently done for pain, for cough, for hæmorrhage, for nervous irritability, for indigestion, for diarrhœa, and what not, to lock up the secretions when each symptom is the simple expression of a need for the removal of some cause of irritation or functional disturbance, is about as logical as to prescribe quinine for toothache.

In the treatment of any disease, no matter how simple, there are three factors that must always be taken into consideration, the patient, the disease, and the remedy. A thorough knowledge of the personal equation—idiosyncrasies, type of disease, and the applicability of the remedy—is a basic requirement if success is to be expected. This is the more especially true of tuberculosis since it runs a long and tedious course, now advancing, now receding, holding its victim, now borne down with despair and now radiant with hope.

As I said before in this paper I shall speak only of such cases of tuberculosis as are distinctly fit for scientific treatment, that is that class of cases in which a diagnosis has been made sufficiently early in the tuberculosis process. My first effort is to satisfy myself by a most thorough examination of this one point. I must answer the best I can this one question, What chance has the patient to respond to any rational treatment? This I must determine by the patient's physical condition rather than by the so called stage of the disease. The question of a tentative prognosis settled I do not take up my time discussing climate—that is when and where to send such a one. This has already been beaten into them *ad nauseam* and they are here for relief if that be possible. I consider it of far more importance to discuss with them matters of personal hygiene, diet, and rest, for these they will need to practise consistently both while under treatment and while in their homes and away from the physician's care.

I shall therefore consider the rational treatment of tuberculosis under the heads of hygienic treatment, dietetic, climatic, symptomatic, and specific, laying stress only on those points which I deem the most essential. I realize that to cover the entire subject would require a volume, and only salient points can be touched upon in a fifteen minute paper.

The hygienic treatment consists in regulating the daily routine and the immediate environment of the patient—in other words in establishing system in such matters where chaos usually prevails. What advantage may a patient hope to obtain from coming hundreds of miles, if he establishes himself or herself in the crowded parts of the city with the air filled with dust and other impurities eighteen out of every twenty-four hours, if the windows are closed fearing a draft, if the streets are noisy when quiet is needed; if all the comforts of home are missing, and a bath becomes a luxury, if the day is spent in hotel lobbies or in social duties, and the evenings in pool rooms and theatres. They can do as well at home and far cheaper. It is more essential to regulate these things than to prescribe drugs. The chances are that the patient has already swallowed half the drugs in the pharmacopœia and will welcome relief. System means everything to the sick, while irregularity makes invalids of the well. Air, pure air, open air day and night, water internally and externally in abundance, rest and comfort, and many other things so essential, can be brought about with a little thought. These may seem like trivial matters that may be left to the patient's discretion but they are not. They are the very things that may bring to naught the best treatment. They spell the difference between success and failure. To ignore them is frequently to lose the opportunity to save a life.

In a paper read before this association two years ago on the dietetic treatment of tuberculosis, I emphasized the importance of a most careful adjustment of the food to the patient's physical condition. I now see no reason to change the views then expressed. I then contended for a liberal diet and I now contend for the same. I endeavor to secure the consumption of an amount of food slightly in excess of the demands of the normal body—increasing the albuminous foods, such as beef, milk, and eggs, and the fats, like butter, cream, and bacon, while holding at their normal proportion or slightly decreasing the carbohydrates—oatmeal, bread, potatoes, rice, etc., with a liberal allowance of fresh fruit and green vegetables. It is my experience that the conversion of the starchy foods into assimilable nutrient materials is more frequently difficult or impossible in tuberculous patients than any other foods. The first object of treatment is to stimulate nutrition, and unless proper food in a form that the patient can utilize is consumed in sufficient amount, the treatment will be unsuccessful. Tuberculosis is a wasting disease in which the power of assimilation is diminished by toxic influence, and unless this waste can be checked the disease will progress. The tissues of the body are naturally valiant warriors on the defensive always but they must have the munitions of war in the form of assimilated food. We may inject into the body all manner of immunizing substances, but if the assimilation is poor and nutrition suffers therefrom, as it always does in the later stage of tuberculosis, it is of no avail and may be decidedly injurious. There is no one thing that requires so much of the physician's time as the proper adjustment of the patient's diet. He will insist that he is eating all he can and yet he does not gain in weight. In such cases it is good practice to have the patient write out for three or five days what he eats for each meal. The object lesson

is rendered more complete by furnishing a small scale for weighing the actual amount consumed for a similar period. In this way it is possible to determine in calories the exact amount consumed and the relative proportion of the various elements. It is a lesson that the patient does not soon forget.

One patient reported that he could not possibly eat more. The various lists seemed to indicate the consumption of a sufficient quantity of food daily, but notwithstanding the other conditions of rest, fresh air, and bathing were about ideal there was little gain in weight or improvement in the tuberculous processes. The actual weighing of the food for five days gave a net result of a little over 2,000 calories each day. Beef juice was substituted for steak and roast beef, one half pint of cream added with an increased allowance of butter and nuts, and the carbohydrates diminished bringing the amount consumed up to 3,000 calories daily with the result that the patient gained twenty-five pounds in ninety days, with marked improvement in the pulmonary condition. In the treatment of all diseases we must sooner or later come to a better knowledge of the important part played in the mechanism of recovery by a properly adjusted diet, and ultimately we will fight disease with dietetic measures rather than with drugs. The physician of the near future must be a dietetician.

Of the climatic treatment of tuberculosis I have little to say. For a hundred years physicians have been sending patients hither and thither in quest of a panacea which they never found. The chief factor to be sought is that equable temperature, sunshine and freedom from dust, which permits the invalid to spend practically all his time in the open air. When this is accomplished all has been done in a climatic way that is of value to the average patient. It is impracticable to send every or many patients hither and thither in search of health and it is illogical. What is needed is pure air and more of it. This can be had almost anywhere.

To take a patient with a scanty income and send him into a strange land where he must endure privation and hardships and poor food, instead of trying to improve home conditions is a folly for which the medical profession is being justly criticised. It is beginning to be looked on as an evidence of ignorance on the part of the profession. Ninety per cent. of the tuberculous must stay at home and ninety per cent. of the remainder would do better under sane conditions there than they now do chasing the "will-o'-th'-wisp" of a climatic cure.

Of the symptomatic treatment I have still less to say, and that chiefly in admonition. There are few patients in the first and early second stage, when living under proper hygienic conditions and a properly adjusted diet, combined with rest and mental equilibrium, who have symptoms calling for any great amount of medicinal intervention. In all sincerity do not drug such a patient to death. The system is already struggling to overcome the depressing effects of a load of toxic substances and the chief symptoms arising are due to this condition. Such drugs as aid in the elimination of the toxine and support the circulatory system are indicated. Hæmoptysis and pleurisy are quite frequent complications that are largely met by rest and free catharsis. Fever, nervous irritability, and rapid heart action are toxic conditions that call for the elimination of toxines. In so far as drugs accomplish this purpose they are useful. Cough is an eliminative process and may be safely disregarded unless excessive. In my practice five drugs, calomel, salts, strychnine, nitroglycerin, and codeine meet most requirements.

The most important addition to our means of treating tuberculosis has been the introduction of tuberculin, and what we now understand by specific treatment consists in its administration in some form. It is not necessary to take time to discuss the various preparations of tuberculin and its physiological action. Scientific articles on these points are accessible to all in recent medical publications. It is now recognized by authorities as an agent of specific value and is in use by specialists in this line of work the world over. The use of tuberculin opens up the whole field of immunity in which such brilliant work has been done in the last few years. Its intelligent administration requires a far greater knowledge of internal medicine then the giving of quinine and calomel demands. With the introduction of antitoxine came a new era in internal medicine, and its successful use furnished the incentive for the greatest research work in modern medicine. The present employment of antitoxines, sera, and tuberculins while far from being perfect, is the natural result of the growth of our knowledge of the mechanism of infection and recovery. When our knowledge of these processes is complete the perfected agent to combat and prevent infection will soon be forthcoming. In the medicine of the near future the words immunity and immunization will have far greater significance than in the medicine of to-day. Wright declares that the physician of the future will be an immunizator.

When tuberculin was first introduced it was hailed as a panacea, used by the overzealous without any definite knowledge of its application and its limitations but one thing could result—it fell into disrepute and it is still in disrepute with that portion of the profession which is unable or is unwilling to devote sufficient study to master the technique of its successful administration. Alcohol, calomel, and quinine to a degree have passed through the same stages of misuse and disaster.

The stock argument now usually advanced by the opponents of the use of tuberculin in the treatment of tuberculosis is that patients so treated do not make perfect recoveries. The fact that a few cases of diphtheria suffered from paralysis after the use of antitoxine was used as an argument against its employment. A better knowledge of the action of the toxines discloses the fact that the administration of antitoxine had nothing to do whatever with the subsequent paralysis. Two facts are, however, overlooked in the case of those treated wth tuberculin—first the patients are not dead, as they very naturally would be if the disease had not been at least partially arrested and second that the victims of other chronic diseases rarely make perfect recoveries. The argument may be true of many second stage cases and is undoubtedly true of all third stage cases in which partial recovery has occurred, but it is not true in first stage cases in which the recovery

is as complete as in diphtheria and typhoid fever. Again the same argument may be applied to surgery. The man with an amputated foot has not made a perfect recovery in the sense that the member has been restored to its former usefulness, any more than the person whose lungs have undergone infection, infiltration, and excavation, although the disease has been arrested and the suppurating surfaces healed.

The prejudice against tuberculin in this country is due to the disregard for the several important factors which should always be considered in its administration, namely the patient, the physician, and the remedy. The European physician considers tuberculin an agent of approved value and uses it where applicable. The condition of the patient must be understood. To give it to every patient that applies for treatment of course means failure. Using tuberculin on every patient just because he or she has tuberculosis without regard to conditions is just about as logical as to give large doses of quinine to every patient that has fever without regard to the cause of the fever. A physician said to me that he had given tuberculin to a large number of cases without results. A little inquiry developed the fact that practically every patient was in the third stage of the disease. He could not expect results in such cases and he should not have given it. The very first thing to consider is the patient's condition—the extent and duration of the disease. A patient in the last stage is practically never suitable for tuberculin. There is little or no tendency for the suppurating surfaces to heal and to increase the amount of toxic substances in the system at such a time merely means to increase the trouble and hasten the processes of destruction. There are often times in the second stage where tuberculin cannot be given. There are new areas of infiltration going on, there are old areas breaking down and there are suppurating surfaces. These supply an amount of toxine already great enough to overwhelm the resisting powers of the body. Again, there are times even in the first stage when the tissues are struggling to overcome the initial toxæmia, and to begin specific treatment at such a time is not only unwise but dangerous to the patient.

If you will study the disease you will discover that as a rule it progresses by a series of attacks and recoveries. Infection occurs, a period of months may pass with practically no symptoms, or only slight symptoms, but the processes are continuing. Suddenly something happens. It may be a cold, a pleurisy, a tuberculous pneumonia, or what is sometimes called malaria. But, whatever has happened the pentup toxines are liberated and cast into the blood current to be spread throughout the body. This is the initial attack. At first the tissues labor to overcome the toxic effects. After a time the body accustoms itself to the toxines and a partial recovery occurs. Weeks or months later an acute exacerbation occurs. The system recovers again with more difficulty and less perfectly. In this manner the disease progresses with periods of attack and periods in which the defense is more or less complete. It is the understanding of this fact that is so essential to successful work with specific remedies like tuberculin. With antitoxine it is different for here you are dealing with a chemical antidote per se. With tuberculin you are trying to stimulate the production of antibodies by the tissues which are already overwhelmed during the acute attack. To give it at this time means to weaken the defensive powers of the body rather than strengthen them. It is by taking advantage of the intervals between the attacks when the defensive powers are again in the ascendency and by stimulating them that we obtain at first a partial and later a complete toxic immunity and finally a bacterial immunity. This is what I mean when I say that the physician must know the patient's condition. Tuberculin is a two edged sword. Given during the initial attack or an acute exacerbation it is an agent which greatly increases the destructive changes, but given during the interval it as greatly aids the construction processes.

The second factor is the physician himself. He must be thoroughly imbued with the scientific aspect of medicine. He must be willing to spend months in hospital and laboratory preparation. He must be content to work ahead patiently—studying his patients from day to day, knowing the mechanism of recovery and understanding the agent that he uses. He must be systematic in his work, for of all remedial agents tuberculin requires the greatest system and method. The work calls for knowledge, courage, and a temperament that is not easily daunted by temporary failures.

A final word as to the remedy itself. Tuberculin has long since passed through the experimental stage. In the hands of the conscientious, the scientific, and the experienced physician, it is an agent of very great efficiency. In the hands of the unskilled it is equally an agent of danger. No one who has treated suitable cases by the systematic administration of tuberculin and paying proper regard to other conditions has failed to note very great improvement and attain permanent results.

In conclusion, the reply of the old artist to a young aspirant for his favor that he mixed his paints with his brains applies most forcibly to the administration of tuberculin, for if brains are not used freely it may result in disappointment to the physician and disaster to the patient.

Chloroform Anæsthesia.—The ultimate conclusions, as regards doses, of the British Medical Association have been published. They are, that a one per cent. vapor is generally insufficient to induce surgical anæsthesia in an adult, at all events within the limits of time ordinarily available; that a two per cent. vapor of chloroform in air is sufficient to induce full surgical anæsthesia; that in pathological conditions, such as poor blood conditions, some diatheses, and grave pathological states, the safety dose or percentage is below two, and must be determined in each case; that the dose for the maintenance of anæsthesia is of as much importance as that of the induction period, and that the failure to recognize this has caused many deaths, and constantly delays convalescence, and that while no definite limit of safety can be fixed for this dose, it is in most cases one per cent. at first, and must be lowered as time goes on.—*Glasgow Medical Journal*, August, 1910.

Our Readers' Discussions.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

CI.—How do you treat chronic nasal catarrh? (Closed August 15, 1910.)

CII.—How do you treat other electric shocks than that of lightning? (Answers due not later than September 15, 1910.)

CIII.—When can a pulmonary tuberculous patient be discharged as cured? (Answers due not later than October 15, 1910.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED) *that the answers be short; if practicable no one answer to contain more than six hundred words.*

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The prize of $25 for the best essay submitted in answer to question C has been awarded to Dr. Neil D. Graham, of Washington, D. C., whose article appeared on page 422.

PRIZE QUESTION C.

THE TREATMENT OF ŒDEMA OF THE LUNGS.

(*Concluded from page 477.*)

Dr. Glenn S. Jones, of Angel Island, California, remarks:

An intelligent understanding as to the cause of the individual case of pulmonary œdema is essential for its masterly management.

Œdema of the lungs from an ætiological viewpoint, may be classified into two arbitrary groups: Œdema produced as the result of hyperæmia, acute or chronic; and œdema as a mechanical process, the inflammation resulting from the transudation of serum into alveolæ and bronchi. A very large majority of the cases belong to the first class in which œdema results from diminished force exerted by the left side of the heart, the right remaining unimpaired.

To the second class belong œdema produced by asthenic, febrile intoxications, and poisonings by certain drugs.

Pulmonary œdema in the first group, is the result of ruptured compensation, as the sequela of acute or chronic dilatation, occurring as a terminal or intervening event in chronic valvular disease, acute valvulitis, myocarditis, angina pectoris, pneumonia, fat embolism, chronic nephritis, hepatic cirrhosis, etc.

The treatment indicated is to: 1. Restore the equilibrium between action of right and left heart; 2, hasten the absorption of the serum from alveolæ and bronchi; 3. increase elimination by skin, kidneys, and intestines.

Absolute rest, in a well ventilated room, with careful nursing, should be insisted upon. To restore equilibrium between right and left heart give fluid extract of strophanthus, three minims, to be given every two hours by mouth or from two or three minims of the five per cent. tincture, given hypodermically. Strophanthus is preferred to digitalis in that its action is quicker and less protracted. In chronic valvular disease where digitalis or other cardiac stimulant have been systematically used, it is important to increase the average therapeutic dose upon the occurrence of pulmonary œdema.

Amyl nitrate is efficient in overcoming syncope, which almost invariably occurs in cases of acute cardiac dilatation, followed by œdema.

Sparteine sulphate is, above all drugs, the most valuable, yet the one least used in this condition. It has the physiological effect of restoring the cardiac rhythm, and stimulating urinary secretion without increasing vascular tension. From practical observation, I have found the average dose of textbooks much too small. It should be given in from one half to two grain doses, at frequent intervals, the dose being decreased and the interval increased, as the contractile energy of the heart increases. Sparteine is especially indicated in œdema secondary to renal congestion. Atropine should be given in combination with the sparteine, to counteract respiratory depression.

The use of alcohol or ether as a cardiac stimulant in pulmonary œdema, should be judiciously avoided, because of the secondary depression, and renal irritation produced. Where very prompt stimulation is indicated, adrenalin in doses of ten minims should be given intravenously.

Caffeine is probably second in value to sparteine and is the adjuvant of choice to maintain cardiac equilibrium after its restoration.

Ergot, in the form of the fluid extract, seems to act beneficially, especially in having a selective action on the pulmonary circulation, lessening the hyperæmia, and retarding transudation of serum.

In cases in which the vascular and intracardiac tension is high and the urinary secretion inhibited, venesection is indicated, followed by free stimulation and promotion of elimination.

Where the renal function is suppressed free diaphoresis should be promptly initiated, by cautious application of hot pack or hot air apparatus.

Pilocarpine is always contraindicated.

Free catharsis should be established by use of salin as hydrogogue cathartics. Oleum tiglii, however, should never he used, even if the patient is in a comatose condition. Where cathartics cannot be given by mouth, I have found the use of physostigmine salicylate, 1/60 grain, by hypodermic injection, followed by rectal enemata of magnesium sulphate to act quite efficiently.

The rarer cases of œdema of the lungs, as the result of asthenic febrile intoxications and poisonings, are treated by free stimulation, elimination, and support as in the first class. In these cases venesection with removal of considerable quantities of blood, are indicated. Here also intravenous transfusion of decinormal saline solution, while directly contraindicated in cases of ruptured compensation, should be the first thought in œdema from intoxications. The poisons producing œdema are usually gaseous, and the most characteristic and interesting group of cases are those produced by illuminating gas.

Diminution of pulmonary congestion is produced by production of superficial hyperæmia with extensive dry cups or by Bier's method.

To prevent the recurrence of ruptured compensation when once restored and œdema after its subsidence, it is imperative that the patient be advised of the necessity for close attention to directions given by the physician. Above all things the patient should be advised to locate in a country where the climate is uniform and altitude not great.

Dr. S. A. Savitz, of Seattle, Washington, writes:

Pulmonary œdema is one of the diseases, which to our regret is more often diagnosticated in post mortem examinations than it is in the state where medical science may have been of aid in overcoming it. To treat this condition intelligently it is of paramount importance to have a fair knowledge of its ætiology and pathology, and hence a brief recapitulation is in place.

It is not an independent primary infection, but an exaggerated symptom of a primary disease and the signs presenting depend upon the associated condition. It is, furthermore, necessary to bear in mind that it is a terminal symptom in numerous diseases, especially in heart disease, pulmonary and renal diseases, and with many other affections. Keeping this point in mind it behooves us to make frequent examinations of the chest notwithstanding whatsoever disease we may treat. Upon eliciting marked dyspnœa, cough with a frothy expectoration, with signs of moist subcrepitant râles, it is safe to clinch the diagnosis of œdema and proceed to immediate and heroic treatment.

Since in the majority of instances œdema of the lungs is a symptom prognosticating fatality, drugs to overcome it are often without avail, but our duty calls for at least to attempt to relieve, if possible, the pulmonary circulation. Comprehending its pathology it is apprehensive that particular attention be given to the cardiac circulation. This is accomplished by such energetic stimulants which possess immediate and powerful counteraction. Gratifying results are obtained by subcutaneous injections of camphor. It should be administered in the form of oil, one part of camphor to nine parts of sweet oil, which latter should be made sterile. To get immediate results from fifteen to twenty minims should be given at one dose, and repeated at short intervals to get the desired effect. Musk in the form of the tincture is indicated on account of it supporting the system by having all the properties of a diffusable stimulant. Externally apply strong irritants such as mustard plasters or hot towels. If the cyanosis is general and the inspirations highly embarrassed, improvement may result by a warm bath with cold douching. If the patient is sthenic and the circulation is of high arterial tension, venesection is beyond doubt indicated and should be resorted to. The gastrointestinal tract should be given attention by administering mild laxatives and an enema. Plumbi acetas has been recommended by Traube, but outside of its empirical value, little can be said for it. If these measures are adopted in the treatment of pulmonary œdema complicated in acute diseases such as typhoid fever, pneumonia, etc., it is my belief that in many instances we may be successful in combating the danger.

After having treated the attack, the next thing to do is to learn the underlying ætiological factor, and at once resort to the treatment. If Bright's disease is the cause of this condition, administer sudorifics and cathartics to stimulate the other emunctories. Of the former, pilocarpine not exceeding 1/20 grain is very beneficial, keeping in mind its depressing effect. To produce diaphoresis without any deleterious results, a hot air or vapor bath if possible, is very admirable. Of the cathartics use salines and also elaterinum, in 1/12 grain doses, if no marked exhaustion is present. Diuretics may be tried but their influence, if any, is vague for the reason that the kidneys in Bright's disease cannot readily respond to our attempts to have their functional activity increased.

If the œdema is dependent upon cardiac diseases tincture of digitalis should be given, in addition to the treatment already outlined.

To dwell on the details on the treatment of all the diseases associating with œdema of the lungs is hardly in place. In short, after making a diagnosis of the affection, study and ascertain the underlying factor, and treat as the condition calls for.

In concluding I believe the following to be important:

1. In all diseases which are protracted, and the patient confined to bed, strict instructions should be given to have the posture of the patient changed at various intervals.

2. Special care should be taken not to confound it with other diseases such as hydrothorax, capillary bronchitis, and pneumonia in the first and third stages.

3. That it is not a primary disease but a symptom of a disease and often the sequela of chronic affections.

4. I cannot too strongly emphasize the importance of frequent examinations of the chest, no matter for what other ailment we are treating our patients. The earlier the diagnosis is made, the better prognosis can be hoped for.

Dr. Raphael J. Wren, of New York, observes:

In the treatment of œdema of the lungs much depends upon the causative factors; and the treatment should be directed to the immediate source of danger to life and to the underlying causative affection.

For the first purpose I employ dry cups over the entire posterior pulmonary area. Should the heart require stimulation as it usually does, one grain of camphor in olive oil or in ten minims of ether should be injected beneath the skin every hour if required. I find this a valuable cardiac stimulant. Atropine and morphine are drugs which I invariably employ in this condition. I inject hypodermically morphine, ¼ grain, atropine, 1/100 grain, and repeat in from three to four hours, if indications are still present.

Should the patient survive the acute attack I then direct my attention to the underlying cause. Whether cardiac or renal, absolute rest in bed, free purgation, and liquid diet are among the first in line of treatment. Should the cause be cardiac in origin digitalis, either the tincture or the infusion, together with a suitable diet and the stimulation of the char-

nels of excretion is the plan to be adopted. The same may be said should the cause of the œdema be renal in origin.

The condition is a grave one no matter the cause, and demands prompt and vigorous treatment.

Therapeutical Notes.

The Treatment of Gastrointestinal Ailments of Nursing Infants.—Nobécourt, in the *Journal de médicine de Paris* for July 16, writes at some length on the clinical variations of the acute gastrointestinal ailments of infants and prescribes treatment. He recognizes four forms of the disease: (1) light; (2) feverish; (3) algid, and (4) dysenteric. In the light nonfeverish form corresponding to the catarrhal diarrhœa of Bouchat, or the simple gastroenteritis of Marfan, the diet should receive attention. If the infant is fed with cows' milk there should be added to each drink two and one half teaspoonfuls of the following solution:

℞ Sodium chloride, ...5ii;
Gelatin, ...5iii;
Distilled water, ...Oii.
M.

It is often prudent to suppress alimentation and put the child on a diet of water alone, giving small quantities of boiled water, Vichy water, barley water, or rice water. At the same time a light purgative is indicated, such as castor oil or calomel—of castor oil thirty to sixty minims, and of calomel one sixth of a grain every two hours.

If the infant is less than eight months old Mery's Vegetable Soup should be given after the diet of water is suspended. But this should not be long continued, and a mush of buttermilk substituted. This is made according to the following formula:

℞ Rice meal, ...5iv;
Sugar, ...5iiss;
Buttermilk, ...Oii.
M.

Later a return may be made to the ordinary milk diet.

The febrile form of gastroentiritis is marked by a rise of temperature, by vomiting and diarrhœa. In these cases the watery diet must be persisted in for a greater length of time, and to overcome the dehydration of the tissues, consequent on the excessive watery evacuations, to add to the water sea salt in the proportion of forty-five to seventy-five grains to each quart, or a mixture of sodium chloride and sodium bicarbonate, seventy-five grains of each to the quart of water. In the beginning castor oil, sodium sulphate or calomel is given to evacuate the intestines. Lavage of the intestine with a solution of sodium chloride in water of the strength of one drachm of salt to one quart of water is also recommended.

After the purgative has acted lactic acid is prescribed in the following combination:

℞ Lactic acid, ...mlxv;
Syrup of orange flowers, ...5x;
Water, ...5v.
M. et Sig.: One tablespoonful every one or two hours.

Moist, warm compresses are applied to the abdomen to relieve pain.

On renewing the milk diet, the lactic acid treatment is stopped, and replaced if needed by benzonaphthol, acetyltannin, or bismuth.

In the hypothermic, algid, or surface cold condition the watery diet is to be ordered, with the addition of saline solutions to overcome the dehydration. Purgatives are contraindicated in this condition, though small doses of calomel or mercury and chalk are advised by some. Lactic acid in light doses is beneficial, and lavage of the stomach may give good results. An enema of warm artificial serum acts as a sedative, but it must not be abused. The surface chilliness may be treated by cotton wrappings, warm baths or mustard baths, prolonged for a half an hour or two hours and repeated once or twice daily if the skin does not redden.

In the event of a comatose condition supervening injections of ether, camphorated oil, and if necessary caffeine, should be given. Stimulants in the form of tea, coffee, light spirits, champagne, sherry, Port or Madeira wines may also be administered in teaspoonfuls or half teaspoonfuls, every half hour or hour, according to the seriousness of the case.

One remedy that is occasionally prescribed is a subject of great controversy, and that is opium. Many have found it revivifier and stimulant, whether given by the mouth or as an enema, but others, as Trousseau, Baginsky, etc., warn against its use as being very dangerous. It is true that it must be used with prudence and reserved for exceptional cases, whether as paregoric, Sydenham's laudanum, or syrup of morphine. Borde contends that quiet and a speedy cessation of the diarrhœa and vomiting, together with the diuresis, is made possible by small doses of morphine administered in the form of the syrup of morphine of the French Codex in the following prescription:

℞ Syrup of morphine [French Codex], ...gr. lxxv;
Syrup of orange flowers 5vi;
Syrup of acacia, ...q. s. ad 5iii
M. et Sig.: One teaspoonful every hour as needed.

REMEDIES OF RECENT INTRODUCTION.

(*Continued from page 479.*)

Tubarsyl is a preparation put up in ampoules for the treatment of tuberculosis. The remedy is marketed in two forms—ampoule No. 1 and ampoule No. 2. The former consists of 30 tubes, beginning with a dose of 0.5 gramme sodium amidophenylarsenate, and of tuberculin old, 0.01 milligramme, and gradually increasing to 0.2 gramme sodium amidophenylarsenate and 0.1 milligramme of tuberculin old. The latter (No. 2) consists of 30 tubes, with doses beginning with 0.5 gramme sodium amidophenylarsenate, and 0.1 milligramme tuberculin old, and gradually increasing to 0.2 gramme sodium amidophenylarsenate, and 1 milligramme tuberculin old. In both series the tuberculin old is contained only in every third dose. The sequence in which the tubes are to be used is given on the labels. The solutions may be used intravenously or intramuscularly.

Tuberal is a clear, colorless liquid, described as a solution of the therapeutic agent of tubercle bacilli, containing 0.3 per cent. of carbolic acid. It is given internally for tuberculosis, in tablespoonful doses.

(*To be continued.*)

NEW YORK MEDICAL JOURNAL
INCORPORATING THE
Philadelphia Medical Journal
and The Medical News.

A Weekly Review of Medicine.

Edited by
FRANK P. FOSTER, M. D.

Address all business communications to
A. R. ELLIOTT PUBLISHING COMPANY,
Publishers.
66 West Broadway, New York.

Cable Address: Medjour, New York.

Subscription Price:
Under Domestic Postage Rates, $5; under Foreign Postage Rate, $7; single copies, fifteen cents.
Remittances should be made by New York Exchange or post office or express money order, payable to the A. R. Elliott Publishing Co., or by registered mail, as the publishers are not responsible for money sent by unregistered mail.
Entered at the Post Office at New York and admitted for transportation through the mail as second-class matter.

NEW YORK, SATURDAY, SEPTEMBER 10, 1910.

RABIES.

The Public Health and Marine Hospital Service has recently issued a most valuable brochure entitled *Facts and Problems of Rabies,* prepared by Passed Assistant Surgeon A. M. Stimson, of the Division of Pathology and Bacteriology of the Hygienic Laboratory. It is, indeed, the most satisfactory exposition of the subject that we have ever met with, dealing with it in all its aspects. It is, however, disfigured by a far greater number of errors of proofreading than we should have expected to find in a piece of work done by the Government Printing Office.

Strange as it must always seem, there are a few capable physicians who deny the very existence of this dreadful disease, just as there are those who assert that vaccination and the use of diphtheria antitoxine are of no service. Of such individuals Dr. Stimson says: "If they are fair minded and possess an average amount of intelligence, a visit to a laboratory where scientific work in this direction is being done will suffice to dispel their objections even if their faith in human nature is so slight that they are able to regard those investigators who have devoted years of disinterested study to the subjects as untruthful or very badly mistaken."

Dr. Stimson gives a useful definition of "fixed" virus (the *virus fixe* of the French). It is a modification of the "street" virus (the virus of the casual disease) produced by passing it through a long series of rabbits. "In this way," he says, "its virulence becomes greater for these animals, so that they finally take the disease after a constant 'fixed' period of incubation." "No amount of passage," he adds, "can reduce the incubation period below this point, so the virulence is said to be fixed."

Inasmuch as rabies is contagious before the characteristic symptoms have declared themselves, there is great danger from a dog which is in the period of incubation. It is quite common for such an animal to show a sudden change of temper, and the change may take the form of increased affection and an unusual longing to be petted. The dog insists on licking its master, and thus trifling abrasions may readily become infected. So, too, the paralytic form of the disease, which is not uncommon in dogs, is peculiarly dangerous to man, for the fury of the ordinary form is lacking and "the owner or sympathetic bystander endeavors to remove an imaginary bone from the throat and becomes bitten or scratched."

The symptoms and course of the disease, in the dog and in the human subject, are graphically described by Dr. Stimson. The clinical diagnosis is usually easy, he says, but observation of the animal that did the biting should never be omitted, and inoculation experiments must by all means be carried out. As regards the post mortem diagnosis, the Negri bodies are conclusive when they are present, as they generally are, but their absence does not exclude the disease. Recovery on the part of the biting dog must not be interpreted as proof that its disease was not really rabies, for dogs known to be rabietic do occasionally recover. Other animals bitten by such a dog should be kept under observation. It is reasonable to admit that a human being may recover from rabies, but cases of alleged recovery are not of unquestionable authenticity.

As regards treatment, cauterization of the wound is of some value, for it tends to prolong the period of incubation and thus affords a better chance for the Pasteur treatment. Nitric acid is the best caustic for the purpose, made to penetrate every recess of the wound. In view of the enormous reduction of mortality achieved by the employment of the Pasteur inoculations, they should always be resorted to, though they sometimes fail and even, in rare instances, accelerate the fatal issue. The procedure calls for improvement, but it is not easy to establish it in the present state of our knowledge.

The continued prevalence of rabies, even to the present moderate extent, is viewed by Dr. Stimson as a reproach to our civilization, and so it doubtless it. Great Britain, he remarks, being an island, has of late years succeeded in suppressing the disease within her borders, and certain peninsular countries have come near to extinguishing it, but the problem is more difficult on great continents. In the Amer-

ican Union systematic action should be taken by the various States, by uniform legislation so far as practicable. All vagrant dogs should be destroyed, and in time of an outbreak all dogs should be muzzled when they are allowed to run at large.

APHASIA AND THE THIRD FRONTAL CONVOLUTION.

An important piece of negative evidence bearing upon the question of the connection between aphasia and the left third frontal convolution has lately been brought forward by Dr. A. Barré (*Bulletins et mémoires de la Société médicale des hôpitaux de Paris,* July 28th). It was the case of a Bicêtre patient affected with senile atrophy of the cerebellum and softening of the base of the left third frontal convolution. The man, who was right handed, spoke in a sing song and monotonous manner and had trouble in pronouncing certain syllables, but there was nothing like aphasia; all his little defects of speech were amply accounted for by the cerebellar lesion. The man died of apical pneumonia, and it was only at the necropsy that the frontal softening was discovered. It was very decided and it could not have come on during the period of prostration and semicoma due to the pneumonia, when aphasia could not have been recognized, for it was evidently of long standing.

PULMONARY ANTISEPSIS.

So far, the use of antiseptics in the treatment of diseases of the respiratory tract has not been very successful, possibly because they could not penetrate into the tissues or destroy the microorganisms without injuring the tissues. Dr. S. A. Pfannenstill, of Malmö, Sweden, after giving much thought to this subject, concluded that the desired action could be obtained only by the use of an antiseptic acting within the tissues in a nascent state, as would occur, for instance, on the decomposition of an iodide by ozone with the liberation of iodine, according to the equation: $2\ NaI + O_3 + H_2O = 2\ NaOH + O_2 + 2\ I$. In order to have this reaction take place within the infected tissues the two substances must act upon each other only within the infected parts; therefore they must be administered by different routes, one to be carried there by the blood current and the other to be used as a local application—for instance, inhalations of ozone and an iodide administered by the mouth.

Pfannenstill gives an interesting account of his treatment in *Hygeia* for May, and reports three cases of advanced tuberculous disease of the larynx, pharynx, and rhinopharynx, which were completely healed. That the excellent results were due entirely to the action of the nascent iodine is thought to be proved by the fact that neither the ozone inhalations nor the iodide treatment had the slightest effect upon the ulcers, when used alone. It seems necessary that the iodide be absorbed into the circulation, as its local application by spraying or painting it on the surface was ineffectual, even with inhalations of ozone.

Ozone is irritating in concentrated form, but when properly diluted with atmospheric air it can be inhaled without any unpleasant effects except a slight, dry cough at first. Coryza or hæmoptysis did not occur in any case. The strength of the ozone can be gradually increased as the patient becomes accustomed to the inhalations.

Sodium iodide was used, as it contains more iodine than any other iodide. It is easily absorbed and, being excreted by the respiratory mucous membrane, is especially well adapted for this mode of treatment. Small doses of sodium iodide, half a drachm to a drachm daily, suffice. Theoretically, one single dose of sodium iodide would act perpetually, provided the ozone inhalations were continued, if small quantities were not lost by excretion and by the formation of sodium iodate. Pfannenstill states emphatically that this new treatment is by no means useful in all cases, but only in localized infections of the upper air passages, and where the surface is ulcerated, because ozone cannot penetrate epithelium, and its inability to do so would render it impossible for the reaction to take place within the affected tissues.

CHOLERA AND TYPHOID FEVER EPIDEMICS.

The older members of our profession will well remember the Pettenkofer theory of the ground water which led that great German hygienist to state that local influences were the principal factors in producing typhoid and cholera epidemics. Pettenkofer had made important observations on typhoid fever, which in his time, in the sixties of the last century, was endemic in Munich. Upon his suggestion, sewerage and a pure water supply were introduced into the Bavarian capital, and typhoid fever disappeared. Diametrically opposed to Pettenkofer's theory was Koch's dictum that epidemics had nothing to do with localities, man himself being the important origin and communicator of epidemics. Pettenkofer wished to make the soil hygienically clean; Koch intended to rid man of parasites. At present Koch's theory is usually accepted,

but we may soon expect the pendulum to swing to the other side. Or is here also the golden middle the right way? Such a combination of both theories has been made possible by Koch himself, who, in 1902, expressed his disbelief in the saprophytic character of the microorganisms of typhoid fever and cholera. Koch's statement found, six years later, a practical demonstration in the cholera epidemic in Odessa in 1908, of which Gamaleia collected important notes. That observer came to the conclusion that localities in which cholera would appear were also visited by typhoid fever epidemics.

Dr. Friederich Wolter, of Hamburg, in his book on *Die Hauptgrundgesetze der epidemiologischen Typhus- und Choleraforschung,* has formulated six fundamental laws for cholera epidemics: 1. The epidemic appearance of cholera is always locally circumscribed. 2. The most important local cause of the development of a cholera epidemic is a certain abundance of water in the soil; at other times the soil may be too poor or too rich in water to permit cholera to develop. 3. Cholera appears yearly in India, where it is endemic, at certain periods, in other localities only at greater intervals, but always depending upon the water condition of the soil. 4. The meteorological factors upon which cholera epidemics depend are in the greater instability of the *Grundwasser.* 5. It is therefore possible that cholera epidemics may appear at the same time in different localities which are geographically removed from each other, if the climatic factors are favorable to the development of cholera. 6. Cholera epidemics appearing at greater intervals and in geographically distant localities depend upon variations of the climate.

CHOLERA.

The moderate prevalence of cholera in several European countries at the present time suggests that there must be no relaxation of our vigilance in guarding against the disease. The chances are small that it will be brought to an American port this season, but the possibility exists. Our means of preventing it from finding a lodgment here are so well ordered, however, as practically to insure us against a cholera visitation.

THE CLOSE OF THE HOLIDAY SEASON.

Though we are entitled to expect a preponderance of enjoyable weather in New York for the next three months, the vacation season is drawing to a close ere yet we have escaped from the torrid conditions of summer, and it will not be long before the melancholy days of approaching winter are upon us. The public schools are on the point of opening, and this fact in itself brings back to town the great majority of those families which, all but paterfamilias, have been able to rusticate during the hot months. The steamships coming in from Europe are tremendously overcrowded, for the most part with homing Americans. As for those who have to put up with the conventional two weeks' outing allowed to employees by most of the commercial houses, happy are they who have been able to arrange for a vacation late in the season, for they will come back to town at a time when they will not have to begin again the endurance of summer heat.

All these classes, we have no doubt, will return to their accustomed vocations with renewed vigor and a heightened capacity for work, and employers will, as usual, find themselves the gainers by the little relaxation which they have permitted their working force to enjoy. We know that there are many persons who are unwilling to go out of town even for the sake of enjoyment, arguing to themselves that the discomforts of travel and the lack of their customary conveniences in country resorts more than counterbalance any passing pleasure to be obtained in such places. There is much in their contention; nevertheless, we think they make a mistake if they live up to it. Many a holiday spent in the country is fatiguing, and for the time being one may seem to have been overtaxed by it, but the benefit, though it may not be apparent at once, is none the less real, and he who has returned from a country sojourn upon which he looks back with little if any sense of satisfaction may justly expect to realize its favorable action within a short time.

A PRIZE FOR AN ESSAY ON MILK.

The Fifth International Dairy Congress, which will be held in Stockholm in 1911, offers a prize of 500 francs for the best essay on the nutritive value of raw milk as compared with that of pasteurized, sterilized, or evaporated milk, determined, at least in part, by experiments made upon infants. In case the raw milk is found to give the better results, it is requested that the rôle played by the enzymes of the milk be determined if possible. The papers, which should be written in German, French, or English and typewritten, should be sent before April 1, 1911, to the Secrétariat général de la Fédération internationale de laiterie, 23 rue David Desvachez, Bruxelles, Belgium. The prize will be awarded by a jury of five to be chosen by the congress.

News Items.

Change of Address.—Dr. Anna Bloomer, who, during the summer months, practises in Asbury Park, has again returned to New York, 8 West Sixty-fifth Street.

Successor to Robert Koch.—Professor Gaffky, of Berlin, has been appointed director of the institution for infectious diseases, as successor to Robert Koch.

American Public Health Association.—The American Public Health Association met in Milwaukee on Monday, September 5th. It has been reported that over 100 health officers from the cities of the United States, Canada, Mexico, Cuba, and Porto Rico attended.

A Safe for Radium.—According to a statement in the *Scientific American*, a safe with a three inch lining of lead has been specially constructed for the British Radium Corporation. Experiments made by experts have proved that lead is practically the only metal which will resist the radium emanations.

Pure Water Supply for Wilkes-Barre.—In order to ward off typhoid fever epidemics in the future such as the city of Wilkes-Barre, Pa., is experiencing at present, the State Health Department officials who have been making an investigation have reported that it would be necessary to build filters at the cost of one million dollars.

Brooklyn Orphan Asylum Hospital.—The new hospital of the Brooklyn Orphan Asylum will be opened September 25th. The building was begun at a cost of $35,000. It is seventy-five by thirty-five feet in size, with five wards, three of which are isolation wards—each with three beds. There are also wards for general hospital work and detention wards to segregate children coming in to the asylum. These will be held under observation at the asylum for two weeks for fear that otherwise they might bring in some sort of contagion. If nothing develops during those two weeks they are passed on and become regular inmates.

American Electrotherapeutic Association.—The twentieth annual convention of the American Electrotherapeutic Association will be held at Saratoga Springs, N. Y., September 13, 14, and 15, 1910. A full programme of committee reports and papers on subjects relating to physicotherapeutics and electrotherapeutics has been arranged, and much serious work has been done in a determined effort to place work in the field of physical therapeutics on an exact scientific basis. There will be an accompanying exhibition of up to date electrical apparatus, and the medical profession is invited to attend. Headquarters will be at the United States Hotel.

Gifts and Bequests to Charities.—Miss Mary Davier, who died recently near La Harpe, Ill., willed the greater part of her estate for the establishment of a hospital in La Harpe. It is thought $30,000 will become available for the purpose.

In making disposition of her property, which is valued at $4,400, Mrs. Mary E. Gerhart, of Camden, N. J., left her interest in the Logan Farm, situated on the Mt. Ephraim Turnpike, Camden, N. J., in trust for the benefit of two nieces, Ella C. Booth and Marie B. Whitfield, during their lives. Upon the decease of both of the latter, the property is to revert in equal shares to the Pennsylvania Institution for the Deaf and Dumb, at Mt. Airy; Hahnemann Hospital Association, and the Children's Seashore Home, Atlantic City.

Red Cross Christmas Seals.—Arrangements for the sale of Red Cross Christmas seals for 1910 were announced in a bulletin issued lately by the National Association for the Study and Prevention of Tuberculosis and the American Red Cross. "A million for tuberculosis" will be the slogan for the 1910 campaign. Two features of the sale this year will be unique and will bring considerable capital to the tuberculosis fighters. The American National Red Cross is to issue the stamps as in former years, but this organization will work in close cooperation with the National Association for the Study and Prevention of Tuberculosis, which body will share in the proceeds of the sales. The stamps are to be designated as "Red Cross Seals" this year and are to be placed on the back of letters instead of on the front.

Lutheran Hospital.—Members of the Lutheran Church in New York are working for the establishment of a hospital for the Lutheran poor. There is also being planned a district medical service, with physicians to respond to calls sent them by Lutheran ministers or other church workers, to treat cases of Lutheran families who are unable to pay for medical and surgical aid.

Mortality Statistics of Connecticut.—During the month of July, 1910, the deaths from all causes reported from 165 towns numbered 1,723, which was 311 more than for the preceding month, and 458 more than for the month of July last year. The annual death rate in a thousand of population for the month was 19.9 for the larger towns, 17.0 for the smaller towns, and 19.3 for the whole State. The deaths reported from infectious diseases numbered 187, being 10.8 per cent. of the total mortality. The deaths of children under five years of age constituted 41.9 per cent. of the total deaths. Twenty-five towns were reported as having no deaths during the month of July, and from three towns no reports were received.

The Health of Philadelphia.—During the week ending August 20, 1910, the following cases of and deaths from transmissible diseases were reported to the Department of Health of the city of Philadelphia: Typhoid fever, 48 cases, 6 deaths; scarlet fever, 13 cases, 2 deaths; chickenpox, 1 case, 0 deaths; diphtheria, 2 cases, 5 deaths; measles, 19 cases, 1 death; whooping cough, 89 cases, 18 deaths; pulmonary tuberculosis, 112 cases, 62 deaths; pneumonia, 11 cases, 19 deaths; mumps, 3 cases; infantile paralysis, 5 cases. There were 7 deaths from tuberculosis other than that of the lungs, 3 from dysentery, 1 from cholera morbus, and 85 from diarrhœal diseases under two years of age. There were 45 stillbirths; 28 males and 17 females. The deaths from all causes numbered 532.

Mortality Statistics of New Orleans.—During the month of July, 1910, there were reported to the Board of Health of the City of New Orleans 547 deaths from all causes, 311 white and 236 colored, in an estimated population of 373,000, 272,000 white and 101,000 colored, corresponding to an annual death rate of 13.72 for the white population, 28.03 for the colored, and 17.60 for the total white and colored population. There were 38 stillbirths, 16 white and 22 colored. The deaths of children under five years of age numbered 105, 57 white and 48 colored; 79 under one year of age, 45 white and 34 colored; 16 between one and two years of age, 8 white and 8 colored; and 10 between two and five years of age, 4 white and 6 colored. The total deaths from tuberculosis numbered 86, 48 white and 38 colored.

The Health of Chicago.—During the week ending August 27, 1910, the following new cases of and deaths from transmissible diseases were reported to the Department of Health of Chicago: Typhoid fever, 75 cases, 5 deaths; measles, 30 cases, 0 deaths; whooping cough, 51 cases, 12 deaths; scarlet fever, 59 cases, 4 deaths; diphtheria, 88 cases, 10 deaths; chickenpox, 4 cases; tuberculosis, 84 cases, 59 deaths; pneumonia, 9 cases, 53 deaths. Total number of cases reported, 420 as compared with 440 for the preceding week. The deaths under two years of age from diarrhœal diseases numbered 144. There were 32 deaths from congenital defects and accidents. The total deaths of children under five years of age numbered 263, of whom 175 were under one year of age. The total deaths from all causes exclusive of stillbirths numbered 639.

The Twelfth South African Medical Congress will be held in Cape Town from November 7th to 12th. It was originally planned to hold this meeting in October, but on account of the Union Parliament meeting on November 4th, it was decided to postpone the congress in order that the visiting members might enjoy the festivities, pageant, and other proceedings which will take place at that time. The president is Dr. C. F. K. Murray, the vice-president is Dr. C. Macgowan Kitching, the honorary treasurer is Dr. R. Arderne Wilson, and the honorary secretary is Mr. H. A. Moffat, F. R. C. S. Eng. There are the following sections: Medicine, surgery, obstetrics and gynæcology, public health, eye, ear, nose, and throat, pathology, and special subjects. Every registered medical practitioner in South Africa is eligible for membership. Dr. A. Jasper Anderson, medical officer of health of Cape Town, is chairman of the entertainment and reception committee.

Vital Statistics of New York.—During the week ending August 27, 1910, the deaths from all causes reported to the Department of Health of the City of New York numbered 1,378, corresponding to an annual death rate of 15.25 in a thousand of population, as compared with a rate of 15.21 for the corresponding week in 1909. The annual death rate for the week in each of the five boroughs was as follows: Manhattan, 14.97; The Bronx, 17.91; Brooklyn, 14.57; Queens, 18.00; Richmond, 16.45. There were 117 stillbirths. The deaths of children under five years of age numbered 549, of whom 402 were under one year of age. The deaths from diarrhœal diseases under five years of age numbered 257; over five years of age, 267. There were 17 deaths from suicide, 10 from homicide, 55 from accidents.

The Ninth International Antituberculosis Conference will be held in Brussels from October 5th to 8th. A preliminary visit to Mons, to inspect the measures used there against tuberculosis, has been arranged for October 4th. On October 5th meetings of the various commissions will be held, including those on sanatoria, milk supply, and international statistics. On October 6th several well known speakers will address the conference, including Dr. R. W. Philip, of Edinburgh, Dr. Raw, of Liverpool, Dr. Williams, of London, and Dr. G. S. Woodhead, of Cambridge. Among the subjects to be discussed are the protection of children from tuberculosis, tuberculosis and the school, and the campaign against tuberculosis. On the last day of the conference the various commissions will present reports showing the progress of the campaign against tuberculosis in the various countries. The conference is under the patronage of the King of the Belgians. The honorary secretary is Dr. Pannwitz, of Brussels.

Mortality Statistics of Minneapolis.—During the month of July, 1910, there were reported to the Board of Health of the city of Minneapolis 324 deaths from all causes, 191 male and 131 female, in an estimated population of 310,000, corresponding to an annual death rate of 8.63 for the total population. There were 24 stillbirths. The deaths of children under five years of age numbered 107, 76 under one year of age and 31 betwen one and five years of age. The total deaths from tuberculosis numbered 39; typhoid fever, 4; scarlet fever, 7; diphtheria and croup, 6; other epidemic diseases, 3; pulmonary tuberculosis, 39; tuberculous meningitis, 1; other forms of tuberculosis, 3; cancer and other malignant tumors, 17; simple meningitis, 7; cerebral hæmorrhage and softening, 10; organic diseases of the heart, 11; acute bronchitis, 1; pneumonia, 14; other diseases of the respiratory system, 7; diseases of the stomach, 1; diarrhœa and enteritis, 56; appendicitis and typhlitis, 2; hernia, intestinal obstruction, 2; cirrhosis of the liver, 4; acute nephritis and Bright's disease, 20; noncancerous tumors and other diseases of the female genital organs, 3; congenital debility and malformations, 14; senile debility, 9; violent deaths, 22; suicides, 7; other diseases, 54. Total, 324.

Tuberculosis Sanatorium at Oakmount.—The new tuberculosis sanatorium of Oakmount, in the town of East Bloomfield, erected by Ontario County at the cost of $15,000, will be formally opened about September 15th. The sanatorium consists of a main building, thirty-nine by sixty-three feet in size, and a large wing to the south twenty-six by forty-nine feet. At the front of the main building are the superintendent's office and the matron's room, separated by a small reception hall. Back of these rooms are the patients' dining room, a large light room, twenty feet square, and the house dining room, twelve feet square. At the rear are the kitchen, scullery, and pantries, all to be fitted up with the most modern and sanitary conveniences. The second story comprises nine commodious sleeping rooms, bathroom, storeroom, and linen closets. They are reached by two stairways, one at the front and the other at the rear of the building. The wing, separated from the main part by a corridor, contains ten rooms for patients, five rooms, eight by twelve feet, besides a large bathroom and common lounging room, on each floor. At the south end of the wing are the large porches, twelve by twenty-two feet, opening from each story. The building is lighted by natural gas and will be heated by steam. The woodwork throughout the building is finished in white enamel, and the many large windows provide ample light and ventilation.

Red Cross Hospital.—After a conference with the Forestry Service officials, which was held on September 2d, the officers of the American National Red Cross announced that it would pay the hospital expenses of the Government employees injured in fighting the forest fires in the Northwest. It is estimated that the expenses will amount to about $1,000, which will be paid out of the contingent relief fund of the Red Cross. Had it not been for this decision on the part of the Red Cross, the employées would not only have lost their wages during the time of their confinement in the hospitals, but would have been required to pay their own hospital expenses as no Government funds were available for those purposes.

Methodist Episcopal Hospital in Philadelphia.—The corner stone of Bradley Hall, the handsome new addition to the Methodist Episcopal Hospital, at Broad and Wolf streets, will be laid September 10th. Bradley Hall is 95 feet long and 45 feet deep. The structure consists of four floors and a basement. The architecture is a modern adaptation of traditional English. On the first floor are to be an up-to-date, completely equipped kitchen, refrigerating plant, receiving room for foodstuffs in bulk, diet kitchen, etc. There will also be a dining room and a serving room. The second floor will have separate dining rooms for nurses and officers, classroom, and the chief resident's quarters. The third floor will contain bedrooms and accommodations for seven residents. The superintendent's quarters will be on this floor in addition to bedrooms for a druggist and bookkeeper. On the fourth floor are to be bedrooms, baths, etc., for the accommodation of the female help employed about the hospital. The basement will contain carpenter shop, storage space, etc. The broad corridor extends the entire length of each floor and opens at one end on to balconies leading to brick inclosed fire tower and opening at the other end on to exposed fire escapes. The entire first floor will be reinforced concrete with finished cement floor. The kitchen and diet kitchen will have marble wainscoting several feet high, and all baths and toilets will be wainscoted and have tile floors.

Civil Service Examination for Physician.—The United States Civil Service Commission calls attention to the examination to be held on September 14, 1910, to secure eligibles from which to make certification to vacancies occurring in the position of physician in the different services. Among the vacancies to be filled as the result of this examination there will be the following in the Indian Service, unless it shall be decided in the interest of the service to fill them by reinstatement, transfer, or promotion: One at Cahuilla, Cal., at $1,000 per annum. One at Pueblo Bonita, N. Mex., at $1,000 per annum. One at Santa Fé, N. Mex., at $1,000 per annum. One at Western Shoshone, Nev., $1,000 per annum. One at White Earth, Minn., $1,000 per annum. Full information regarding the examination for physician is contained in section 197 of the Manual of Examinations, revised to July 1, 1910. Applicants must have reached their twentieth birthday, but not their fortieth birthday on the date of the examination. Applicants for positions in the Indian Service must accompany their applications with a certificate from a reputable physician showing that they are in good health and free from tuberculosis in any and every form. Men only will be admitted to this examination. This examination is open to all citizens of the United States who comply with the requirements. Applicants should at once apply for a copy of the Manual of Examinations and the proper application forms either to the United States Civil Service Commission, Washington, D. C., or to the secretary of the board of examiners as follows: Post office, Boston, Mass., Philadelphia, Pa., Atlanta, Ga., Cincinnati, Ohio, Chicago, Ill., St. Paul, Minn., Denver, Colo., San Francisco, Cal; Custom-House, New York, N. Y., New Orleans, La.; Old Custom-House, St. Louis, Mo. No application will be accepted unless properly executed and filed with the Commission at Washington. In applying for this examination the exact title as given at the head of this announcement should be used in the application. As examination papers are shipped direct from the Commission to the places of examination, it is necessary that applications be received in ample time to arrange for the examination desired at the place indicated by the applicant. The Commission will therefore arrange to examine any applicant whose application is received in time to permit the shipment of the necessary papers.

Pith of Current Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL.

September 1, 1910.

1. The Results of One Hundred and Sixty-eight Operations for Hernia, By CHARLES L. SCUDDER.
2. Educational Methods in the Antituberculosis Campaign, By JOHN B. HAWES.
3. The Personal Relation of the Physician to His Patients, By OLIVER H. HOWE.
4. The Necessity of the General Practice of Medicine as a Preliminary Training for those Engaged in Special Work, By CAROLUS M. COBB.

1. Operations for Hernia.—Scudder describes his interpretation of the Bassini operation for inguinal hernia and reports 244 operations done for herniæ of all kinds. There have been no deaths following operation in uncomplicated cases. The only deaths were in the strangulated group. There were 25 cases of strangulated hernia; 10 patients of these died; 3 were inguinal, 1 was ventral, 1 was femoral, and 5 of the 10 fatal cases were umbilical. These 10 deaths make a mortality of forty per cent. in the strangulated group. He has been able to obtain the present condition of 158 of these patients, 90.6 per cent. of the cases operated in are known to be cured permanently. There are a number of hernia operations described, but if each is carefully analyzed it will be found that all of the satisfactory procedures are based upon the same fundamental principles. Every operation for hernia presupposes the existence of a pouch of peritonæum into which the abdominal viscus protrudes. The presence of this peritoneal pouch is a constant invitation to the contained viscera, whether it be intestine or other organ, to protrude. Until this pouch is completely obliterated, the hernia cannot be cured. The Bassini operation seeks to obliterate the hernial peritoneal pouch on a level with the anterior abdominal wall so as to efface all evidence of a pouch. After the peritoneal pouch is eliminated, the further steps in the technique of any good hernial operation consist in a firm closure of the muscular and fascial abdominal wall. The spermatic cord in the adult is best treated by transplanting it to beneath the layer of the external oblique. In children it does not seem necessary to transplant the spermatic cord. There are very few cases indeed in which a resection of the spermatic veins is a necessary step. If there is present upon the side of the hernia an undescended testicle, he believes that, unless there is some contraindication, the removal of the testicle with ligation of the cord upon a level with the parietal peritonæum is indicated. He believes that there are few cases in which the general anæsthesia secured by ether will not be satisfactory. Local cocaine and spinal anæsthesia should be reserved for patients too ill to be etherized, and for the aged and those with a tendency to chronic bronchitis. In certain strangulated cases in which the patient is very ill a local or spinal anæsthesia may be indicated. He thinks that it is unwise to operate upon infants under three years of age for hernia, and in the very aged operation is often contraindicated. These two extremes of life offer the chief exceptions to the operation for inguinal hernia. The operation for hernia is a safe operation. It is very important to emphasize the fact that an immediate operation should be done when a strangulated hernia is recognized. No taxis, not even the slightest, should be used in the presence of a strangulated hernia. The danger of damage to the gut and even of rupture of the gut and the danger of reducing the hernia *en bloc* is considerable. Delay in operating upon a strangulated hernia is unwise. Taxis of a strangulated hernia may be attended by such very severe consequences that it should almost never be employed.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

September 3, 1910.

1. A Criticism of the Blood Pressure Apparatus, By C. F. HOOVER.
2. Pathology of Mastoiditis as Revealed by the X Ray, By SIDNEY LANGE.
3. Continued Subnormal Temperature in Infancy, By HENRY W. CHENEY.
4. In Memoriam: Wilhelm Meyer, By HOLGER MYGIND.
5. Operations on the Vocal Cords in One Thousand Cases of Goitre, By JUSTUS MATTHEWS.
6. Currents at the Eastern End of Lake Erie and Head of Niagara River. Their Influence on the Sanitation of the City of Buffalo, N. Y., By GEORGE EDWARD FELL.
7. Prevention of Typhoid Fever, By WALTON FOREST DUTTON.
8. Surgical Mistakes in Infancy and Childhood, By SAMUEL WALTER VELLEY.
9. Results of Experience with Noguchi Modification of the Wassermann Serodiagnosis Test for Syphilis, By J. F. WAUGH.
10. Two Years' Experience with the Wassermann Reaction in Practice: A Preliminary Report on Fifty-seven Cases Treated from the Standpoint of the Wassermann Reaction, By B. C. CORBUS.
11. Treatment of Stammering, By G. HUDSON MAKUEN.
12. A Case of Opium Poisoning, By E. B. CLAYBROOK.
13. Notes on Certain Tests for Indican in the Urine, By H. I. DAVENPORT.
14. Succussion Splash in Diverticulum of the Œsophagus, By C. M. COOPER.
15. Roller Bandage Improvised from a Square or Handkerchief Bandage, By W. H. BAILEY.
16. Partial Gangrene of the Left Index Finger, By J. F. HULTGEN.

1. Blood Pressure Apparatus. — Hoover observes that the sphygmomanometer is generally assumed to be an instrument which enables us to measure the maximum and minimum endovascular arterial pressure. If this assumption is true, it does not follow that we have any data on which to estimate the mass movement of blood, the real problem that remains to be solved in the study of cardiovascular diseases. In subjects with a normal vascular system the blood pressure apparatus gives us reliable information about the maximum systolic pressure. But in clinical experience it can be shown that the blood pressure apparatus gives misleading information even on this basic point. The diastolic blood pressure can be measured about as accurately as the systolic blood pressure. But the diastolic endovascular pressure is not a measure of the systole of an artery. In other words, we may have the equivalent of a normal diastolic pressure and the artery remain full of blood during the car-

diac diastole. He does not wish to discourage the use of the blood pressure apparatus. It is a very valuable instrument, but its chief value consists in teaching us how to palpate the arterial pulse. No instrument can take the place of the finger, nor can any instrument teach as much about the pulse as can be learned by palpation.

9. **Results of Experience with Noguchi Modification of Wassermann Test in Syphilis.** — Waugh says that in serum diagnosis of syphilis a positive result is an indication that the disease is still active and that more treatment is necessary. One negative result should not suffice in any suspected case of syphilis. The test should be repeated at intervals of six months for the first year after all treatment is discontinued and afterward at longer periods. In quite a large percentage of cases two years of specific treatment, regardless of the manner in which it is administered, is not sufficient to insure a negative result from the serum test. The tendency at the present time is rather to give insufficient treatment in syphilis than to over treat the disease. The Wassermann test is of inestimable value in obscure cases of syphilis, and in distinctive diagnosis.

10. **Wassermann Reaction.** — Corbus states that the Wassermann reaction is valuable for both the general practitioner and the specialist. Positive findings are a distinct indication of existing syphilis, and repeated negative findings are extremely valuable for a favorable prognosis, although the test is not infallible in every case. It is as important for the general practitioner as is the microscope for the determination of gonorrhœal secretions. The Wassermann test is most valuable for the syphilographer, not only as an aid in the diagnosis but also in the treatment of syphilis. Until the discovery of the *Spirochæta pallida* and the application of the Wassermann test little indeed was known about this universal disease, save what could be seen externally and on the mucous surfaces. With the introduction of these two means of diagnosis we have at last something tangible to work with. It is possible now to make an exact diagnosis and to begin treatment at once, telling the patient with some degree of assurance what his future may be.

11. **Stammering.**—Makuen divides the treatment of stammering into three classes. In the first class we put all those nervous children who present any abnormalities of speech development; in the second class, those who have begun to show a tendency to stammer by an occasional hesitancy of speech, and in the third class, the confirmed stammerers, those who not only stammer but who know that they stammer, and whose natures have been deeply influenced by it. There are three stages of the affection, therefore, the prodromal, the acute, and the chronic. The treatment should begin at the kindergarten age, and it could be given in the kindergarten school by especially trained teachers, but the work would be greatly hampered, if not altogether negatived, by the home environment of such children, in which confusion and excitement usually reign supreme. The ideal place, therefore, for such a patient would be in a special hospital school, away from his mother and father, and brothers and sisters, who together, unwittingly of course, are oftentimes directly responsible for his condition, and who, if given a little time and opportunity, will surely lead the unfortunate one into the second stage. The treatment of the second stage should be similar to that of the first, but some additional measures must now be adopted. In the first place the patient must be speedily cured in order to save him from the mental complications attendant on the third stage of the affection. It is cruel to send such a child to school, and as a rule he should be taken out of his home and kept in the atmosphere of good speech. He should be drilled in the elements of speech, and given respiratory, phonatory, and articulatory exercises. The child should be trained in the natural easy use of the speech mechanisms, and this should all be done without any reference being made to his tendency to stammer. Indeed it is quite possible to cure him of the affection at this stage without his really knowing that he had it. It is in the third stage that we find the affection in its fullest development and with all its psychological variations. The ultimate cause, whatever it was, may have long since disappeared, but the disastrous results are plainly manifest in the character and disposition of the afflicted one. Mentally, physically, and sometimes also morally, there seems to be no health in him, there is no disease which so taxes the skill and ingenuity of the physician as does this combination of nervous derangements.

MEDICAL RECORD.

September 3, 1910.

1. The Circulation as a Factor Which Determines the Effects of Microbic Invasion, By Alexandr Haig.
2. Some of the Open Questions in Tuberculosis, By Thomas E. Satterthwaite.
3. Special Dangers Associated with Operations on the Biliary Passages and Their Avoidance, By Benjamin T. Tilton.
4. The Use of Day Camps and Night Camps in the Home Treatment of Tuberculosis in New York City, By N. Gilbert Seymour.
5. A Simplified Method for the Transfusion of Blood, By Archibald M. Fauntleroy.
6. The Juvenile Form of General Paresis, with Report of a Case, By James V. May.
7. Anæmia, with Some Remarks as to Its Pathogeny and Hypodermic Treatment, By G. K. Dickinson.
8. Observation on Dengue, By Nagib Ardati.
9. Measles and German Measles: Characteristics of the Present Outbreak in Philadelphia, By Maurice Ostheimer.

1. **Blood Circulation and Microbic Invasion.**— Haig believes that one of the most important factors that result in weakness and poor nourishment and finally in the possibility of an attack by microbes is slow and defective capillary circulation. For capillary circulation controls the function, nutrition, and eventually the structure of every cell of the body tissues; it controls the combustion of the body as a whole, what it does with the food it gets, and what it does with the waste products formed in metabolism; it influences the body temperature, and in a word, its life and reaction to surroundings, for combustion is life and life is combustion. Two factors underlie slow and defective capillary circulation: Obstruction in the capillaries and deficient *vis a tergo*, heart power. When both are present

together then the capillary circulation is at its worst and the microbes have the most power for harm. We know, continues the author, that the one important cause of capillary obstruction is excess of uric acid in the blood stream, and that this, if severe and long continued, may lead to heart failure from overwork accompanied by malnutrition, leading to dilatation and consequent increased intrapericardial pressure, which again result in extremely defective circulation and nutrition, and eventually bring about fatty degeneration of the cardiac muscle. The weak and poorly nourished are an easy prey for the microbes because 1, any valuable uric acid is in solution in their blood showing capillary circulation; 2, their muscles are weak; 3, weak heart is an additional cause of a poor circulation; 4, collæmia, weak heart, and slow capillary circulation mean poor nutrition of both blood and tissues, and slow and defective functioning throughout the body. For heart failure increases collæmia, and collæmia in its turn increases heart failure: then heart failure diminishes both appetite and digestive power, and so the downward trend of the whole physiology of the body is continuous and inevitable till some external factor cuts through the vicious circle.

2. **Tuberculosis.**—Satterthwaite concludes that while tuberculosis is communicated by contact, it is not contagious to the same degree as many other diseases, notably the exanthemata, syphilis, and gonorrhœa; moreover, it is only communicable under certain favorable circumstances. This fact deserves to be widely known. Fully fifty per cent. of all adults contract the disease at one time or another; in cities a much higher percentage. In fact, the tendency to the disease increases with age, in some sort of ratio, after infancy, so that while it may exist in infants of two years in the low proportion of five per cent., at the age of ninety nearly everyone has had some experience of it. The disease is contracted in various ways. What the ratio is between the different avenues of invasion has still to be determined. But it is a matter of the very first importance. Many of the problems of tuberculosis are complex, and this fact should be impressed on the laity, who at the present moment are disposed to take a leading part in the crusade, without adequate knowledge of the problems involved. There is also a humanitarian side to the question, apart from its scientific aspects. Public measures entailing unnecessary hardships for the individual or his family will necessarily retard the ultimate success of a movement, however good it is, and this is a philanthropic movement, that should enlist everyone's interest and support. We have reached a point, also, where the intervention of the agencies of our National Government would be very helpful in the crusade. For it is now an interstate matter, like that of the water supply of our cities, and the pollution of our streams, all of which call for some sort of governmental control. The establishment of a National Bureau of Health would provide for the supervision of these matters and physicians at large should sustain the hands of President Taft in endeavoring to establish such a bureau at the earliest possible moment.

8. **Dengue.**—Ardati calls attention to some complications found at the last epidemic of dengue at Beirut: Hæmorrhages into the skin, varying in size from that of a pin's head up to four or five cm. in diameter. Alarming hæmorrhages from the mucous membranes of the nose, stomach, and intestines. Menorrhagia and metrorrhagia were observed in a number of instances. Abortions in the fifth, sixth, or seventh month of pregnancy. Severe gastrointestinal symptoms, pain, nausea, vomiting, diarrhœa, and dysenterylike symptoms. Heart infections. Typical conjunctivitis, which subsided with the end of the attack. Œdema of the skin, anasarcalike, which disappeared when the dengue was over; no heart or kidney trouble being present. Relapses in about 15 per cent. of all cases, coming on after the second or third apyretic day; and in some cases even a second relapse had been noticed. Protracted course, running two or three weeks, during which the patients have an irregular fever, malaise, lassitude, and inability to do any work.

BRITISH MEDICAL JOURNAL.

August 20, 1910.

1. A Paper on Some Pharmacological Effects of the Strong Sulphur Water (Harrogate), By David Brown.
2. The After History of Forty Cases of Epithelioma of the Lip, By A. Rendle Short.
3. Effect of a Denture after Excision of the Upper Jaw and Septum Nasi, By Rushton Parker.
4. An Immense Renal Calculus, By George W. Ord.
5. A Simple Method of Removing Sebaceous Cysts, By H. Freeth.

2. **Epithelioma of Lip.**—Short says that it is at once evident that when the glands are already infected, only an extensive dissection will give the patient a reasonable chance of cure. This dissection, involving removal of the whole lymphatic area, should be carried out when the growth is small and no glands are palpable. The risk of the operation is not as high as fifteen per cent.

5. **Removal of Sebaceous Cysts.**—Freeth describes a simple method of removing sebaceous cysts. An incision is made, not over the cyst, but through the healthy skin along side it, parallel to and the same length as the shortest diameter of the cyst. The hypodermic injection of a little eucaine solution along the line of the incision is all the anæsthetic required. A small blunt hook is then inserted into the incision and is worked round the cyst, tearing through the adhesions of the cyst wall, first on the superficial aspect, as that is where the cyst wall is thinnest and most liable to burst, and then on the deeper aspect, until the cyst is completely separated, when it can easily be delivered by pressure from above, much in the same way as a cataract is delivered. A dab of collodion on the wound is sufficient dressing. The advantages of this method are: 1. The incision is through healthy skin and is, especially where the cyst is oblong, much shorter than by the usual method. 2. The union is quicker, more satisfactory, and the appearance of the resulting scar much better than that of an incision through the altered skin over the cyst. 3. A minimum amount of anæsthetic is used, as only a linear injection is required. 4. In the case of cysts situated on the scalp very much less hair need be cut, as all that is required is a single snip of the scissors over the site of the incision.

LANCET.

August 20, 1910.

1. Strain, By Sir LAUDER BRUNTON.
2. Peptic Ulcer and Dilation of the Stomach, By T. R. BRADSHAW.
3. A Case of Migraine Associated with Chlorine Retention, By HUBERT HIGGINS.
4. A Rough Bacteriological Examination of the Condition of Swimming Bath Water, By G. H. PEARCE.
5. A Case of Pernicious Anæmia Terminating in Acute Diabetes, By JOHN PARKINSON.
6. A Note on the Abuse of Purgatives, By HERBERT FRENCH.
7. A Case of Rheumatic Arthritis Followed by Streptococcic Invasion, By G. R. STRONG.
8. Public Health Administration in Hamburg, By W. E. HOME.

2. Peptic Ulcer and Dilation of the Stomach.—Bradshaw finds that acute ulcer of a kind liable to lead to perforation is nearly three times as common in women as in men. Chronic ulceration, which is likely to give rise to cicatricial deformity and to call for plastic surgical operation, is equally common in both sexes; the same can be said of fatal ulceration. The most frequent situation for peptic ulcer is at or near the pylorus and on the posterior wall. Much less frequently it occurs on the anterior surface of the stomach and at the cardiac end. The location has an important influence on the complications and sequelæ of the ulcer. Thus if a pyloric ulcer heals with cicatrization it is likely to lead to stenosis and gastrectasis. An ulcer on the moveable anterior surface is likely to perforate into the peritonæum, while an ulcer at the back is more likely to contract protective adhesions to the adjacent structures. In the rare instances in which the ulcer is at the cardiac end complications connected with the left pleura are liable to occur. As regards the treatment of gastric ulcer, his practice for many years has been to withhold all food by the mouth for three days after the last appearance of blood in the vomit or the stools, and to administer nutrient enemata four times a day. On the fourth day he begins to administer small amounts of milk diluted with soda water or lime water, perhaps only a teaspoonful every three hours at first, and gradually increases the amount every day. Under this treatment relapses rarely took place and progress, though slow, was sure. Latterly, since Lenhartz published his views, he has tried giving more food from the very first, a pint of milk with a beaten up egg in the first twenty-four hours and the amount steadily increased, and he has seen no harm result. The theoretical basis of this treatment is that the administration of nutrient enemata, while little more than slow starvation, excites a flow of acid gastric juice in the stomach which irritates the ulcer, while, on the other hand, the proteids in the egg and milk not only maintain the nutrition of the patient but combine with the acid of the gastric juice and render it inoffensive. As to after results he remarks that considering the frequency of symptoms suggesting ulcer in women, one is inclined to think that the great majority at least in them leave no permanent trouble. On the other hand, in cases where permanent pyloric stenosis or other organic deformities are present it is the rule to find a history of long antecedent gastric trouble, including the vomiting of blood. Further, it is not possible in practice absolutely to separate cases of ulceration from those affected by cicatricial contraction. As likely as not when a stomach is dilated from a cicatricial contracted pylorus a chronic open ulcer will be found at the margin of the orifice; and where the symptoms point to active ulceration extensive cicatricial contraction will also not infrequently be found to exist. Dilation of the stomach, Bradshaw remarks, in a greater or less degree may be met with in a variety of conditions, and it is no easy matter to determine where physiological distention ends and pathological dilation begins. The size of the normal stomach must vary almost from hour to hour, and its form and position alter greatly according to the position of the body, whether erect or reclining. Where great dilation is present, such as results from marked stenosis of the pylorus, the signs and symptoms are very obvious. The patient will tell us that for weeks or months past he has been subject to attacks of vomiting at various intervals, that the vomit is usually brought up in enormous amounts, so as to fill a chamber or a washbasin either at once or in the course of two or three hours. The vomit will probably be described as frothy or barmy, or it may be simply watery or stained brownish from altered blood. If we are shown a specimen of the vomit we will find it strongly acid, and with the microscope we will probably find sarcinæ present in the sediment. Physical examination of the stomach will yield appearances which differ according to the period of the examination. When the stomach is full and relief from vomiting has not taken place the outlines of the distended organ will be distinctly visible. In marked cases the greater curvature is seen sweeping across the abdomen two or three inches or more below the umbilicus; the lesser curvature may also be seen if there is visceral ptosis; between the two there is a convex protuberance which may be seen to alter its form as the result of peristaltic movements of the stomach wall. On palpation with both hands coarse succussion splash may be easily elicited, and also by gently shaking the patient from side to side. Percussion will yield extensive tympanitic resonance over the stomach area and dullness in the left flank. After relief has been obtained by vomiting, the signs of dilation may be but slight or may be impossible to detect. Some splashing sounds may usually be elicited on sharply depressing the anterior abdominal wall, but the same may occur in subjects apparently healthy.

4. Examination of Swimming Bath Water.—Pearce draws attention to the danger lurking in swimming bath water. He sampled the water as it entered the tank from the pipe. The result was a good one, showing that the water from a bacteriological standpoint compared favorably with other water used for drinking purposes, it being water from the ordinary town's supply which is used for swimming bath purposes. Plate preparations were made on gelatin and agar agar, the former being incubated at 20° C. and the latter at 37° C., and the colonies forming were examined from day to day. According to Miquel's standard, pure water may contain from 100 to 1,000 organisms per cubic centimetre, very impure being defined to contain 100,000 and upward per cubic centimetre. In the water under examination, taken from the sup-

ply pipe as it entered the bath, the number of organisms developing on gelatin, incubated at 20° C. and counted in forty-eight hours, equalled about 43 per c.c. of water. Coliform or intestinal organisms were present in 5 c.c. of water but not in 1 c.c. A sample of the first class swimming bath water was then taken, persons swimming in the water at the time of sampling, the water having been in the bath for three days, and 194 persons having bathed in it. The same process having been followed, it was found that about 2,850 organisms were present in 1 c.c. of water. Coliform or intestinal organisms present in 5 c.c. of water. A sample of the second class swimming bath water was taken on the same date and under exactly similar circumstances. The water had been in the bath three days, and 767 persons, mostly children from the elementary schools, had bathed in it. This gave about 15,000 organisms per cent. of water. Coliform or intestinal organisms were present in 0.5 c.c. of water but not in 0.1 c.c. Another sample of the second class water was taken, the water having been in the bath for three days, and the number of bathers, mostly children from the elementary schools, amounting to 974. The number of organisms per c.c. of water in this sample was about 300,000. Coliform or intestinal bacilli were present in 0.5 c.c. but not in 0.1 c.c. *Bacillus enteritidis sporogenes* was present in 10 c.c. of water. He made various subcultures of the numerous colonies, with a view to ascertain as far as practicable the nature of some of the more numerous ones. Many of the bacilli isolated were harmless ones, although all were not. He found the *Bacillus prodigiosus* present in each sample. The *Bacillus fluorescens liquefaciens* was found in great numbers. This germ occurs in putrid infusions and also in sewage. The *Bacillus subtilis* was found, as was also the *Bacillus proteus vulgaris*. The latter is found in sewage water, and is one of the class of germs which cause putrefaction. It is also found in cases of abscess of the lungs and several diseases of the lung. A number of colonies of molds occurred in the samples of second class bath water. The *Bacillus coli communis* was present in samples of water from both the first class and second class baths. The *Staphylococcus pyogenes aureus* was present in great quantity. The *Streptococcus pyogenes aureus* was also present. The practical conclusion the author draws is that the baths should be emptied at more frequent intervals. Each time they are emptied the sides and floors should be thoroughly scrubbed with an efficient disinfectant before refilling.

MEDIZINISCHE KLINIK.

August 7, 1910.

1. Neuroses after Accidents, By Siegmund Erben.
2. Psychology and Psychopathology of Old Age (*Concluded*), By A. H. Huebner.
3. General Infection of the Human Body by the Bacterium Coli Commune, By August Lindemann.
4. Electric Light Baths, By R. von Jaksch.
5. The Treatment of Fistulæ with Beck's Bismuth Ointment, By Brandes.
6. The Normal Weight According to the Proportional Length of the Body, By Coswin Zickgraf.
7. Radium Therapy of Malignant Diseases, By Nahmmacher.
8. The Theory of the Formula of the Circulation, By Sperling.
9. The Development of the Modern Tar Treatment, By Britz.
10. The Virus of Tuberculosis, By F. Jessen.
11. Glands with Internal Secretion, By Friedel Kahn.

1. Neuroses after Accidents. — Erben discusses traumatic neuroses at considerable length and considers that their treatment should be systematically psychotherapeutic.

3. General Infection with the Bacterium Coli Communis.—Lindemann reports a case of general infection with the *Bacterium coli communis* in an infant, a week old, nursed by its mother, which proved fatal in a week. Autopsy revealed a large ulcer of the mucous membrane of the intestine.

August 14, 1910.

1. Tuberculous Diseases of the Eye, By C. Hess.
2. The Importance of Constitutionalism in the Ætiology of Some Nervous Diseases (Recurrent Oculomotor Paralysis and Toxic Polyneuritis), By Alexander Margulies.
3. The Treatment of Syphilis with Ehrlich-Hata's New Preparation of Arsenic (Dioxydiamidoarsenobenzol), By Erich Hoffmann.
4. Congenital Atresia of the Duodenum, By W. Weber.
5. The Effect on the Heart and Vessels of Natural Carbondioxide Baths in the Old and the New Style, By Bruno Fellner.
6. Some Disturbances of the Digestion and Nutrition in Patients Suffering from Thoracic Diseases, By J. Cecikas.
7. The Sulphur Mud Baths of Ischl and Their Use, By Adolf Ott.
8. Hecht and Wechselmann's Modification of Wassermann's Reaction, By K. F. Hoffmann.

3. Treatment of Syphilis with Ehrlich-Hata's New Preparation of Arsenic.—Hoffmann says that the development of this new method of treatment is based on the results obtained with atoxyl. Ehrlich first replaced the dangerous atoxyl with arsacetin, replaced this with arsenophenylglycin, and finally this with dioxydiamidoarsenobenzol, or 606, which has a remarkably quick eliminating effect on human syphilis even after a single injection, according to several authors. He doubts whether a single injection heals the disease, but admits that in a number of his cases he was unable to find spirochætæ three days after the injection. He noticed clinically that anginæ, mucous patches, and papules often disappeared without any local treatment, as well as indurated glands and the initial lesion. In one case of malignant syphilis and in one of a tertiary, ulcerating syphilide of the face he met with a strong reaction the day after the injection. The four cases he reports are so remarkable as to deserve mention. Case I. Congenital syphilis with syphilitic ozæna in a boy, fifteen years old. The symptoms presented were severe headache, unbearable fœtor, exophthalmos, and paresis of the abducens. Injection July 7th, of 0.3 gramme of 606. The symptoms disappeared almost immediately and there was a great subjective and objective improvement, but the strong Wassermann reaction was unchanged on July 23. Case II. Female, thirty-four years old. Tertiary ulcerating syphilide of face involving nose, right cheek, upper and lower lips. Wassermann reaction strongly positive on July 12th, injection of 0.3 gramme of 606

with a very strong local reaction on the following morning. August 1st, perfect healing with the exception of the infiltrated border. Wassermann's reaction mildly positive on July 28th. Case III. Female, thirty-four years old. Secondary syphilis; universal papular exanthema, involving even the palms and the soles, proliferating papules on the genitals and patches in the mouth and on the tonsils. Injection of 0.3 gramme of 606 in acid solution May 24th, followed by fever for four days. On June 6th, exanthema just visible, papules and patches gone. Case IV. Male, forty years of age. Ulcerating gummata of tongue and scrotum, ulcers in the left angle of the mouth for four years. Injection of 0.3 gramme of 606 followed by a high fever and pleurisy due to an embolic central pneumonia. Finally, this author considers this new remedy very valuable in cases of mercury and iodine idiosyncrasy and as a preventative.

4. Congenital Atresia of the Duodenum.—Weber reports a case of this rare malformation and discusses at considerable length the question of diagnosis.

August 21, 1910.

1. Treatment of Acute and Subacute Otitis Media, By Stenger.
2. The Importance of Constitutionalism in the Ætiology of Some Nervous Diseases (*Concluded*), By Alexander Margulies.
3. Disinfection and Wound Treatment with Iodbenzin, By Gustav Meyer.
4. Experience thus far with Ehrlich 606, By Braendle and Clingestein.
5. Congenital Atresia of the Duodenum (*Concluded*), By W. Weber.
6. Diagnosis of Acute Pancreatitis in General Practice, By Stuparich.
7. A Case of Black Water Fever, By W. Mollow.
8. Remarks on the Article on Means of Pleasure as an Aid in Heart Diseases by Max Herz, By R. Fels.
9. Answer to the Above, By Max Herz.

1. Acute and Subacute Otitis Media.—Stenger says that the persistence of the symptoms and fever in spite of the opening of the tympanum indicates the presence of a malignant form of the disease with a tendency to the mastoid, and under such conditions preparations should be made to open the mastoid process. New local pain and slight rise of fever after several days without pain or fever indicates a retention in the tympanic cavity. The membrane should be watched and when it bulges another paracentesis should be made. When the suppuration remains unchanged while at the same time tenderness or a swelling appears over the mastoid, usually with disturbance of the general condition, or when the suppuration is periodically slight suddenly to become very profuse again, disease of the mastoid is present. When the secretion has ceased and the drum membrane healed and there still remain headache and a feeling of tension in the affected side of the head, coming on chiefly at night, or during work, associated at times with a slight fever, an extradural collection of pus is to be suspected. All other higher rises of temperature of either pyæmic or continuous character must awake suspicion of a cerebral complication, either of the dura or sinus.

4. **606.**—Braendle and Clingestein report their experience thus far with 606 on twenty-seven cases. They find the general reaction to vary, but have always met with a distinct rise of temperature, lasting on the average about three days. The pain and the formation of infiltrate also vary, but while the former is in general dependent on the latter, some patients complain much of pain although the infiltrate present is comparatively small, and others with large infiltrates complain little of pain. These results were obtained when the remedy was used as at first proposed. When the suspension was neutral, as prescribed later, the rise of temperature and pain was slight. The infiltration appeared on the third or fourth day. In several patients the blood pressure was found to be increased shortly after the injection, while from the second to the third day the pulse was small and slow, without any threatening symptoms as a rule. Three patients had signs of collapse of short duration. Slight after symptoms were observed on the part of the nervous system. In about a fourth of the cases the tendon reflex was somewhat increased for some days after the injection. The curative results were brilliant in some cases, but not especially so in others. Roseola and all specific affections of the mucous membranes quickly responded in both the early and late periods, but in several cases papules of the anus and genitals retrograded only slowly, and some exanthemata of large and small papules showed little tendency to resorption. A negative Wassermann reaction was obtained in only one of the twenty-seven cases. Slight recurrences from two and a half to three weeks after the injection were noticed in four patients in whom the efflorescences had completely healed. Finally, the authors declare that this preparation showed results in producing retrogression of syphilitic efflorescences, particularly in malignant syphilis, such as they have never seen produced by any other medicament, but how far those results are permanent they cannot say.

ROUSSKY VRATCH.

July 3, 1910.

1. The Value of Ehrlich's 606 in Malaria, By J. J. Iversen.
2. The Pathogenesis of Appendicitis and the Lesions Found in this Condition, By G. I. Baradouline.
3. Fixation of the Complement in Rabies, By N. A. Dobrovolskaya.
4. Wassermann's Reaction in Syphilis and in Typhoid Fever, By V. A. Merkourieff.
5. Observations on Typhus Fever in Astrakhan, in 1907-1908 (*Concluded*).
6. Positive Results in Serum Diagnosis of Syphilis, By E. A. Rothmann.
7. Significance of Leucocytosis and the Opsonic Index in Some Gynæcological Conditions (*Concluded*), By E. M. Weinstein.

1. Ehrlich's 606 in Malaria.—Iversen has used Ehrlich's 606 in tertian malaria. A single injection of the remedy caused a cessation of the symptoms, and a disappearance of the plasmodia from the blood

3. Wassermann's Reaction in Typhoid Fever.—Merkourieff tested the blood of three patients with typhoid fever by means of the complement fixation test and in all cases obtained a negative result. When Wassermann first announced his method it was said that the test had proved to be positive in typhoid fever as well as in syphilis.

July 10, 1910.

1. Hermaphroditism, By A. A. Mouratoff.
2. The Influence of Radium Emanations upon Sodium Urate, By L. L. Fofanoff.
3. The Diagnosis of Echinococcus Cysts by Means of a Complement Fixation Method, By A. N. Dobrotine.
4. Calmette's Reaction in Tuberculosis and other Diseases, By E. M. Shapshali.
5. Obstruction of the Intestine in Two Places Due to Mechanical Conditions, By V. L. Tovbine.
6. Congenital Urethral Strictures, By R. M. Fronstein.

1. **Hermaphroditism.** — Mouratoff was consulted by a patient, apparently a girl of seventeen years of age, for "irregularities" in the sexual apparatus. There was a well developed testis in one labium and a fairly well developed penis in place of the clitoris. The secondary sexual characteristics were rather of the male type. There was a rudimentary uterus but no ovaries or tubes could be felt, even under anæsthesia. The testicular mass was removed at the patient's urgent request, and was found microscopically to consist of tissue identical in structure with that of the male gland.

2. **Effect of Radium on Urate Deposits.**— Fofanoff found that radium reduces leucocytic infiltrates markedly, and that its emanations (the D rays particularly) act favorably upon urate deposits and gouty nodes. These facts were experimentally determined by the author, and may be of use in establishing the reason for the beneficial clinical effects of radium in gout.

6. **Congenital Strictures of the Urethra.**— Fronstein calls attention to the fact that in cases of enuresis nocturna in children there may be a congenital urethral stricture, and urges pædiatrists to send such cases to a urologist for diagnosis. Internal urethrotomy, rather than dilatation, is the method of choice in the treatment of these cases.

July 24, 1910.

1. The Treatment of Syphilis with Ehrlich's 606, By J. J. Iversen.
2. The Diagnosis of Tumors of the Pituitary Body, By N. R. Botvinnik, E. R. Hesse, and E. A. Gise.
3. The Use of Adrenalin in Laryngology, Rhinology, and Otology, By S. M. Bourak.
4. The Value of 606 in Tick Fever, By V. L. Jakimoff and N. K. Jakimova.
5. Lipoma Arborescens, By A. X. Babassine.
6. Thrombosis of the Left Femoral Vein in Appendicitis, By I. I. Jankovsky.

1. **Ehrlich's Remedy in Syphilis.** — Iversen found, like other observers, that intramuscular injections of Ehrlich's 606 were very painful, and adopted the intravenous method of injection. The most efficient method is a combination of the intramuscular and the intravenous routes. Thus from 0.4 to 0.5 gramme of dioxydiamidoarsenobenzol is injected intravenously, and after forty-eight hours 0.3 gramme is injected intramuscularly. After the intravenous injections, within a few hours the temperament rises and there is a severe chill. The fever lasts but a few hours. Vomiting occurs in some cases. The results of the treatment upon the syphilitic lesions were excellent, the time required for the remedy to act on the lesions, however, varies a great deal, according to the anatomical character of the changes. The Wassermann reaction at first became more marked after the injections, but disappeared on the average in from twenty to thirty days. In no case in which the reaction had become negative did it return to positive. It is too early to speak of the permanency of the results, or of the prevention of recurrences.

4. **Ehrlich's Remedy in Tick Fever.**—Jakimoff and Jakimova found Ehrlich's 606 a powerful antidote in tick fever (caused by *Spirochæta Duttoni*), provided a sufficient dose is used. By injecting 606 and the antitick virus the disease may be prevented. These injections must be given twenty-four hours before infection.

SOUTHERN CALIFORNIA PRACTITIONER.

August, 1910.

1. Arteriosclerosis with Report of Observations on Blood Pressure, By Boardman Reed.
2. Similia Similibus Curantur, By W. Warner Watkins.
3. The Los Angeles Health Department—The Milk Supply, By Mrs. Charles Farwell Edson.
4. The Surgical Treatment of Ulcerative Perforation of the Hollow Viscera, By Andrew Stewart Lobingier.
5. Salivary Calculi with Report of Cases, By Joseph M. King.

1. **Arteriosclerosis. Observations on Blood Pressure.**—Reed has made observations on blood pressure in arteriosclerosis. He says: Exercise of all kinds from the gentlest to the most active and vigorous, is followed, after a brief rise of blood pressure and increase in the pulse rate (which can be made very slight and transient) by a decided fall of from 5 to 50 mm. of mercury, according to the severity and duration of the exercise and the condition of the patient. Generally the pulse rate increases as the presure falls, but the gentler exercises, especially those against resistance, carried out in accordance with the rules of the Schott brothers of Nauheim, will leave the pulse rate unchanged, or when rapid before, slowed and strengthened. As a rule the higher the pressure before, the greater is the fall after, the mild exercise. The elaborate Schott rules are not necessary to obtain very favorable results except in the weakest patients. From ten to twenty minutes spent in making a variety of muscular movement, not more than from two to ten or twenty of each kind, the number depending upon the degree of the cardiac tone (the weaker the heart the fewer and the more slowly to be made) will nearly always produce decided results. An attendant is not indispensable after the patient has been taught to resist, himself, by contracting moderately the muscle opposed to the one in action. Pulleys also can be adapted so as to give the proper amount of resistance, but the patient needs to be cautious always not to over exert in any of these ways. The gentlest exercises do the most good in feeble patients. Mental exertion has produced varying results, but never in his experience a lowering effect on the blood pressure unless after exhaustion. When very severe or exciting it tends to raise the pressure (as do all the passions), but otherwise is likely to leave it unchanged. During the period of digestion, from one to three hours after a simple ordinary meal not including tea, coffee, or alcoholics, he has found the blood pressure usually lowered, often decidedly, though it has sometimes been transiently raised before falling, as

happens with exercise. Whenever, however, a flatulent distention of the intestines has resulted, as especially during the night in dyspeptics, the pressure has been raised. The pulse rate has been always higher after meals. The cumulative effect of any special diet is a different matter. An exclusive milk or meat diet has lowered the pressure in arteriosclerosis when previously high, but the ultimate effect of the meat diet has been aggravation of the disease in the vessels as shown by the nervous and other serious symptoms. In the great majority of his observations the blood pressure has been found very much higher shortly after arising than later in the day, especially in patients not confined to bed. This rise has been particularly marked in patients troubled with flatulence, but by no means confined to them. Various causes probably contributed to this. The reflex stimulation of the heart by the distention is possibly one cause, the absence of the pressure lowering influence of digestion and of the other activities of the day and evening, is probably another, and the tonic effect of the prolonged rest and sleep upon the heart must also be a factor.

AMERICAN JOURNAL OF THE MEDICAL SCIENCES

September, 1910.

1. The Therapeutic Action of Digitalis, By V. E. Henderson.
2. Excessive Digestive or Alimentary Secretion of Gastric Juice, By Julius Friedenwald.
3. Chronic Pancreatitis, By Joseph Sailer.
4. Congenital Heart Block Occurring in a Father and Two Children, One an Infant, By Z. M. K. Fulton, Charles F. Judson, and George W. Norris.
5. The Duration of Pregnancy, with a New Rule for Its Estimation, By Ellice McDonald.
6. Further Studies of Sarcoma of Bone, By Leo Buerger.
7. Cases Illustrating the Origin of Hysterical and Pseudohysterical Symptoms, By Tom A. Williams
8. Psychasthenic Attacks Resembling Epilepsy, By Thomas J. Orbison.
9. A Fatality Following the Removal of Tonsils and an Adenoid Growth, By Francis R. Packard.
10. Metabolism after Parathyreoidectomy, By J. V. Cooke.
11. The Electrocardiogram in Clinical Medicine. 1. The String Galvanometer and the Electrocardiogram in Health, By Walter B. James and Horatio B. Williams.
12. The Effects of Injections of Killed Streptococci, By George H. Weaver.

2. Excessive Secretion of Gastric Juice.—Friedenwald observes that the combination of an excessive alimentary secretion with a continuous gastrosuccorrhœa was twice noted by Zweig. Alimentary gastrosuccorrhœa is a gastric affection of nervous origin, which is apt to extend over a long period of time, presenting great variability of symptoms, and with days and weeks of apparent perfect health giving place suddenly to periods of severe distress. That this disorder is purely a form of gastric neurasthenia is manifested by the fact that when the patient is restored to good health the increased secretion is apt to disappear. This condition occurred in two of his cases, in which after an Ewald-Boas test breakfast the quantity of gastric secretion was reduced to from 30 to 50 c.c., and with a dry meal no secretion could be obtained for a short period of time. On the other hand, Friedenwald says, Zweig has shown that this affection may pass over into a condition of continuous gastrosuccorrhœa if improperly treated. The treatment is largely the treatment of nervous dyspepsia. As most patients have lost much flesh and strength, the best results are obtained by means of the rest cure. In five of his cases in which this form of treatment was undertaken, excellent results were obtained. Ordinarily the diet should consist of three meals a day, as all food ingested has a tendency to increase the gastric secretion. The nourishment should contain an excess of proteins and fats and a small proportion of carbohydrates. Of the proteins, milk, eggs, and fish are to be preferred, as they do not tend to increase the gastric secretion as much as meat. Fats decrease the acid of the gastric secretion and are therefore highly recommended; they should be given as butter, cheese, cream, and olive oil. The carbohydrates should only be allowed in the most digestible forms, as vegetables in purée form, dextrinized flour, stale bread, and toast. The quantity of fluids ingested need not be decreased in this affection. Large quantities of milk and alkaline waters may be taken with benefit. Such foods as bouillon, meat extracts, coffee, tea, and alcohol, as well as all acid and spiced foods, should be avoided. The alkalies with or without belladonna or its preparations are often serviceable in the treatment of this disorder.

3. Chronic Pancreatitis.—Sailer states that in chronic pancreatitis nutrition is almost invariably impaired and the patient is emaciated, sometimes to an extreme degree. Digestion is disturbed. There is discomfort after eating, and often this discomfort can be associated with certain articles of food, particularly the carbohydrates. The discomfort does not appear to have any characteristic type. It may be a sense of oppression, fulness, or of actual pain. Vomiting occurs quite constantly, but it may be only at long intervals. It rarely occurs immediately after taking food unless the condition of the patient is very grave, but may occur in the morning or some hours after taking food, and is usually preceded by some hours of discomfort. Constipation is the rule. Occasionally there are attacks of diarrhœa, but chronic diarrhœa does not appear to occur. The main factor in the diagnosis is the recognition by some chemical or other test of the insufficiency of the pancreatic secretion. These tests may be divided into the following groups: Those showing disturbances of the internal secretion of the pancreas, if such a secretion exists at all. Those which have to do with the recognition of the existence, in the stomach or intestinal contents, of some of the pancreatic ferments. When they can be demonstrated it is assumed that the pancreas is still functionally active. Those which indicate whether the pancreatic ferments have been discharged into the intestinal tract and have properly digested the food material that has been brought to them. Those which show a disturbance of the carbohydrate metabolism. The treatment is much disputed. The surgeons state that there is no medical treatment, and the only relief can be had from draining the biliary passages. The medical treatment is symptomatic and specific. The symptomatic treatment consists exclusively in the improvement of digestion. The gastric contents should be studied and

restored, if possible, to approximately their normal reaction. Food should be easily digestible, and it may be necessary to give a diet similar to that used in diabetes. Constipation should be combated by laxatives or enemata. The specific treatment consists in the administration of substances designed to supply the missing or defective pancreatic secretion. Carnot, states our author, is so confident of the efficiency of his therapy that he regards failure to improve after its administration as evidence of the noninvolvement of the pancreas. These substances are all preparations of the gland itself. It must be remembered that the preparations of different makers vary extraordinarily in efficiency. Some of the so called extracts of pancreas, pancreatin, trypsin, etc., are practically inert, and none of them have a proteolytic activity comparable to that of scale pepsin. All the commercial preparations, moreover, are contaminated with bacteria, chiefly *Bacterium coli*. They must, moreover, be administered in such a manner that they are not destroyed by the gastric secretion, because as soon as the pancreatic secretion is brought in contact with the gastric secretion, its activity is permanently lost. For this reason they are given in very much the same way as various test substances; that is to say, either in salol coated pills or glutoid capsules. The salol coated pills are objectionable because they are very large and very hard to swallow, and leave a painful sensation in the œsophagus persisting for several hours. The glutoid capsules, on the other hand, are similar in size and ease of swallowing to the ordinary capsule. After a little experimentation he has devised a method of preparing the glutoid capsule which is simple and apparently efficient. The ordinary gelatin capsule was employed, and as soon as it was filled a camel's hair brush dipped in melted gelatin or hot water was passed around the line of union of the two parts. As soon as this dried the capsule was immersed in pure formalin for three minutes, and then thoroughly washed. Such a capsule filled with carmine stains the fæces if given twenty hours before the movement, but it will remain in acid gastric juice in an incubator for twenty-four hours without showing any signs of softening.

5. **Duration of Pregnancy.**—McDonald has evolved a rule to determine the date of labor which is dependent upon the height of the fundus of the uterus above the symphysis. The height of the fundus is dependent upon the occipitococcygeal measurement of the child, and this varies in direct proportion to the weight of the child, as does the length. The rule is as follows: The duration of pregnancy in lunar months is equal to the height of the uterus in centimetres divided by 3.5. It depends upon the more or less regular growth of the uterus of 3.5 centimetres each month of four weeks, and is very exact after the sixth month. The measurement is taken with the patient lying flat, and one end of the tape is placed at the upper border of the symphysis, while the other is held by the thumb into the palm of the hand. The fingers of the upper hand are held at right angles to the fundus of the uterus, and the tape follows the contour of the uterus save at the last dip. Multiparæ with lax abdominal walls and thin uteri should be supported at the side, so as to bring the occipitococcygeal axis of the pelvis into the long axis of the mother's body. This rule, combined with the estimation of pregnancy by reckoning from the last menstruation, gives a fairly exact determination of the probable date of labor.

10. **Metabolism after Pregnancy.** — Cooke states that we can distinguish two distinct series of phenomena: (1) A serious metabolic disturbance resulting from the absence of parathyreoid secretion; and (2) the tetany which appears later and is probably a result of this primary disorder of the catalytic processes. The increase in the excretion of total nitrogen and ammonia, with increase in some of the salts in the urine, and the increased ammonia content of the blood after parathyreoidectomy are rather suggestive of some form of acid intoxication. If we then assume that the "circulating toxine" is a normal metabolic product of an acid nature, and is combined with bases before excretion, we can explain the increase in the bases found in the urine. It is possible that parathyreoid secretion normally oxidizes this intermediate acid body. In the absence of the secretion there is an increased nitrogenous metabolism. It does not seem necessary to assume that all cases of tetany are due to parathyreoid insufficiency, or the functional disturbance of the gland that is assumed when anatomical evidence is wanting, as there may possibly be disturbances of catalysis with similar changes from other causes than parathyreoid insufficiency. This is illustrated by some observations in a recent case of gastric tetany, in which the tetany was allayed by calcium given by mouth, but at autopsy the parathyreoid glands were found to be normal.

MILITARY SURGEON.

September, 1910

1. A Ready Means of Increasing the Marching Radius of the Soldiers, By William W. Reno.
2. Venereal Diseases in the United States Army: Their Prevention and Treatment, By L. Mervin Maus.
3. The Prevalence and Prophylaxis of Venereal Diseases at One Military Post, By C. F. Morse.
4. Rules for the Personal Hygiene of the Soldiers, By Joseph K. Weaver.
5. Feeding the Infants in the Tropics. By Henry Page.
6. The Establishment of a Proficient Volunteer Medical Corps for the Army and Navy; A Problem of the Future, By Harold Hays.
7. Syphilis and its Treatment, By M. H. Simons.
8. A Case of Balantidium Dysentery, By Louis C. Duncan.
9. Diseases of the Heart among Applicants for Enlistment, By Samuel M. De Loffre.
10. A Case of Intestinal Bilharziosis, By W. Jackson.
11. Report of a Case of Yaws, By J. F. Siler.

1. **Increasing the Marching Radius.**—Reno states that statistics show that as a rule soldiers' feet are badly deformed. This deformity restricts the marching radius, and is directly traceable to wearing ill fitting shoes, first in civil life and later, in the army. No special effort is made in the army to correct this deformity, but it could be removed readily and the marching radius of the soldier increased by: Securing shoes built along anatomical lines; insuring that in each post suitable sizes are

always available for issue; measuring the feet of each soldier in order to indicate the minimum sized shoe he can wear without foot injury; inaugurating the "try on" system in the shoe store house; and rigid foot inspection.

2, 3. **Venereal Diseases in the Army.**—Maus remarks that venereal diseases practically cause from sixteen to twenty per cent. of admissions to the sick report, and decrease the efficiency of the army more than the next three highest prevailing diseases, which include malarial affections, intestinal diseases, including dysentery, diarrhœa, and enteritis, and amygdalitis, which alone caused 3,635 admissions. With the intelligent use of the proper antiseptic, the contraction of venereal diseases can be greatly diminished in the army, thereby removing a dangerous and demoralizing factor in military life, and decreasing the constantly noneffective rate of the army from twenty to twenty-five per cent. The recognized measures for the prevention of venereal diseases in the army are imperfectly carried out at the majority of posts and neglected altogether at some of them. Monthly lectures on general military and personal hygiene should be required of medical officers to commands, not only for the purpose of educating the officers and men on these subjects, but to enable them to preserve their health against contagious and other preventable diseases. Weekly physical inspections of companies or detachments should be made by an instructed noncommissioned officer, under the direction of the company commander, in undershirts, drawers, and bare feet, immediately after the Saturday morning inspection for the detection of personal uncleanliness, physical defects, condition of the teeth and feet, and contagious diseases. All men suffering from physical disqualifications or disease to be ordered at once to the hospital for the action of the surgeon. Line and noncommissioned officers perform these duties at recruiting stations and should therefore be qualified for such company inspections. Antiseptic tubes should be made a part of the kit of the soldier and the men instructed in their use, with such orders as may be necessary. The antiseptic tube should be made of metal foil, sufficiently large to contain 4 c.c. or a teaspoonful, and provided with a slender nozzle about three quarters of an inch long with a close fitting cap; the idea being to inject a small quantity into the urethra and anoint the glands and prepuce with the remainder. Pure petrolatum, containing about thirty-three per cent. of calomel, has proved to be a preventive against syphilis and chancroids. To this could be added one of the silver compound preparations or thymol. —Morse is also in favor of the prophylactic method. A packet which shall contain an antiseptic urethral injection and a bit of calomel ointment for inunction, to be compact and easily slipped into a vest pocket and to be furnished free to all men on application would therefore be an improvement on the system installed. He believes the results from the universal use of such a packet through the army will eventually bring about a situation in which it may be held a punishable military offense to contract venereal disease, and the enormous percentage of disability reported from this cause year after year will be reduced to a minimum.

6. **Proficient Volunteer Medical Corps.**—Hays observes that a call could be issued from the army and navy departments for volunteer surgeons. Among the sixty odd thousand physicians in the United States, at least one in twenty would respond. Thus a corps of some 3,000 volunteer surgeons would immediately arise. Every medical school should have a visiting military surgeon whose duties it should be to give a series of lectures on the advantages of medical military duty to the outgoing class; and having aroused these men to some slight sense of duty, he should ask them to join the medical volunteer corps. The men belonging to such a corps should be between twenty and forty years of age, and of good standing in the Medical Association. Thus we would always have a corps of young men on hand, who would be fit for duty. In every town or city where ten or more men are commissioned, they should form an organization and meet at regular intervals during the winter months for purposes of mutual instruction and drill. In out of the way places where no such organization could be effected, pamphlets could be sent from the army and navy departments regularly, showing the recent advances in military hygiene, etc. Such pamphlets should also be issued to the various organizations in the different cities. During the year, surgeons from the regular army and navy should be sent throughout the country giving instruction. Such contact with men in active duty would be a great stimulus to a volunteer organization and at the same time would place them in more intimate contact with the work that was actually going on. State camps for the volunteer men could be instituted every two years or a certain number of men assigned to the militia camps at their biennial encampments. A man should only be allowed to be a member of the corps as long as he sticks to the required work and should be suspended if he does not live up to the strict discipline of military rule. Each man so commissioned should be given some insignia showing his rank, and he should be made proud of the fact that he is a volunteer surgeon in the great army or navy of the United States of America.

INTERSTATE MEDICAL JOURNAL.

September, 1910.

1. The Theory, Methods, and Psychotherapeutic Value of Psychoanalysis, By William A. White.
2. The Indications for and a New Technique Pertaining to the Operations of Cæcostomy and Appendicostomy in the Treatment of Intestinal Lesions, By Samuel Goodwin Gant.
3. Factors that Shape the Successful Treatment of Nervous Diseases, By Joseph Collins.
4. Paget's Disease of the Nipple: Report of an Interesting Case, By Ernst Jonas.
5. Operation for Cystocele: An Improved Method, By D. Tod Gilliam.

1. **Value of Psychoanalysis.**—White, in speaking of the value of psychoanalysis takes up also the physician's attitude. In the first place his attitude should be one of absolute lack of critique. The physician is merely after facts, for by the analysis he hopes to help his patient by removing the symptoms. He will in the course of his analysis hear many intimate thoughts, learn of many wrong, per-

haps disgusting or even criminal acts. He should express no surprise. They are but facts, that is all. The patient must not be blamed or laughed at. He has already done that for himself many times. In fact that is often the trouble. Self blame may have been the cause for the original repression. His moral sense is already keen, in fact, perhaps, too keen, and an element of prudery or overscrupulousness must be removed for a more healthy attitude of mind. Sympathy is likewise not to be indulged in. The patient does not want it and it is not helpful. The attitude of the physician, however, has as an element the most important factor in sympathy—understanding. To be understood is indeed a privilege. For years the psychoneurotic has failed of being understood, has refrained from talking to persons about himself, perhaps, after one or two disagreeable experiences, for fear of being laughed at. In fact, he has failed to understand himself. Now to find some one who does understand—what a relief—and it is helpful in no small degree in the progress of the work. The demands upon the physician are very great. Not only must he have no end of patience, and be able to give a great deal of time, but he must be constantly on the alert to grasp every clue and must be always resourceful in the face of the unexpected. It is these elements in the attitude of the physician—his lack of critique, and his understanding—that are the quiet determinants making through the weeks and months of psychoanalysis for a more wholesome, a more robust philosophy of life, and finally when all the submerged complexes and the mechanisms of the symptoms have been uncovered our patient emerges literally born again. The disordered material which the patient brought to us has, if we have been successful, been sorted over, rearranged, added to, and built into a new and enduring structure. Such, in brief, are the theories, the methods, and the aims of psychonaalysis as a psychotherapeutic agent.

4. Paget's Disease of the Nipple.—Jonas states that, according to recent investigations, Paget's disease of the nipple is cancerous from the very first, rapidly involving the skin and the breast itself. The practical result of this conclusion demands for Paget's disease the same prompt attention and radical surgical interference as is accorded all other cancers of the breast. There is a striking parallelism between Paget's disease of the nipple and leucoplakia in cancer of the tongue; and also an analogy with certain cancers of the scrotum and penis, occurring in certain working classes.

Proceedings of Societies.

MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Meeting of March 21, 1910.

The President, Dr. Reynold Webb Wilcox, in the Chair.

(*Concluded from page 495.*)

Phthisiophobia.—Dr. J. H. Loman, of Cleveland, Ohio, said that fear had undoubtedly been one of the greatest promoters of human progress, for to fear an enemy was to study his resources, question his motives, spy out his movements, and try by all efficient means to prevail against him. But when fear grew to be hysterical, it was emasculated, and was no longer a well balanced element of power; it rather, in fact, sank into weakness and stupidity, and from being a stimulating factor in human affairs became a benumbing one. Phthisiophobia implied unreasonable fear, and carried with it an overemotional quality. He said if he were to express the actual attitude of the scientific world toward tuberculosis he would state that it entertained, instead of this, a wholesome fear of the disease, and that with this fear went intelligence, courage, and a desire to extend protection from it. To show the correctness of this position, and to bring the world to adopt it, should be one of the objects of medical science. To fear tuberculosis in the sense the word phthisiophobia implied was to run from an idea, but to protect the tuberculous from others and from themselves was sane and effective. The very act of resisting a common danger energetically would dispel unreasonable fear. It was the knowledge of what was possible in the case of the individual which must root out the fear of the disease generally. A vast amount of educational propaganda had been made in this direction, and it was effective in proportion as the people were receptive—that is, intelligent. Unreasonable fear could not be preached down; something else must be substituted for it. The generic idea of the disease should therefore be replaced by the thought of the individual. Replace the fear of illness by the fear of penalty from a vigorous administration of the law, and the public would have something tangible to think about; something which would not scare it and which it would respect. One could not resist the conviction that with tuberculosis we were in the presence of a controllable contagion. Thence came the justification of the heroic endeavors undertaken by many municipalities, and notably by New York. These measures, if carried still further, to the point where the public could see without analyzing them, and adopt them easily, without that fear of thinking which many persons dreaded, would banish phthisiophobia forever.

To extend the study of the characteristics of the disease, and the many problems connected with it, to anything like even practical completeness would require the cooperation of a larger part of mankind, sick and well, than had as yet by any means been the case. As this was to be a study of the individual, the individual must participate in it. The more he participated in it, the more his interest would grow. With increasing interest would come increased curiosity, sounder knowledge, and a greater protection for all. It should be understood that all the efforts put forth had for their object the rendering of tuberculous subjects less harmful and less numerous. With this conception of the tuberculous movement there would be less antagonism to the building of new institutions for the sick poor, less fear on the part of nurses in caring for the sick, and less solicitude among friends lest the disease separate them—in a word, there would be less general unreasonable fear. Every individual was exposed to certain risks; he took certain risks in his very living, and the risks increased with the increased pressure of civilization. Each group of

people also had its peculiar risks, to which each individual belonging to it was exposed. Now, if the precise attitude of each one could be ascertained, his liability to misfortune could be in a measure known. A knowledge of this measure of risk would replace the bogey which was based on an indefinite conception of existing conditions and was often simply an impression derived from false observation and reasoning. We should then have a synthesis of accumulated facts, rather than an analysis from false premises, and should be much nearer the truth. Our factor of safety would be very much larger.

One of the causes of restlessness among the people was the sudden, irrational, intermittent, and desultory acts of overzealous officials. It was the unexpected which put the public on the defensive. Therefore, every procedure that was likely to interfere with customs and habits should be well considered and gradually and logically introduced. All the various departments of antituberculous work should be made practical and popular, so that there might be a place for every person who needed any one of them. These activities throughout the country were not at present closely enough correlated, and this was particularly true of public and private charities, which were sometimes widely dissociated. To make these agencies cooperate as component parts of one harmonious whole required a thorough organization, and this, the speaker thought, should begin with the Federal government. Should the government determine to direct, regulate, and control the movement against tuberculosis, it would find itself at once in possession of an army of eager volunteers ready to be led. He doubted if anything would give more confidence to the nation in its efforts against consumption than an active and well organized government control, and nothing would more quickly banish fear. The belief of the average citizen in himself, in the organizing power of his fellows, and in the power of his country, together with local jealousy and pride, would give this centralized body an enormous centrifugal force, which would be felt throughout the length and breadth of the land. Institutions would multiply under the fostering care of intelligent leadership, and it would not be long before the slogan "no tuberculosis" would begin to have a real significance.

Dr. Charles J. Hatfield, of Philadelphia, said, in regard to Dr. Flick's suggestion as to securing the admission of advanced cases of tuberculosis to general hospitals, that a movement in this direction had been started within the last two years in Pennsylvania. An investigation showed that in such hospitals the average number of beds annually vacant was 2,000, while the deaths in the State from pulmonary tuberculosis amounted to something over 8,000 a year. It was unquestionably the fact that the greatest danger of the communication of this disease occurred in the last three months of life, and the plan of taking radical cases in general hospitals would be attended with considerable advantages. Thus, the patient was within easy reach of his family and friends, and there was no odium attached to going to a general hospital, such as was often felt to be the case in regard to special institutions; while at the same time the patient would be under intelligent control at the period when there was the greatest danger of his infecting others. It was the general opinion of scientific men that such cases could be easily isolated. In Pennsylvania a bill authorizing the appropriation of $1,000,000 for the care of poor consumptives at an expenditure of one dollar a day per capita had been introduced into the legislature, and numerous petitions signed by physicians and others sent to the governor, urging him to give the measure his approval. This bill, however, was referred to the Committee on Appropriations and left there, so that the governor had no opportunity of acting in the matter.

Dr. Bunley Robinson said he felt compelled to take issue in regard to many of the points generally advocated at the present day. Thus, he was opposed to the expenditure of public or private money for tuberculosis sanatoria. Even if the patient was relieved or cured, what was the use if he was to be returned to the same conditions which had bred the disease? Our aim should be to get rid of the underlying causes, and thus prevent the development and dissemination of tuberculosis. This could be done only by improving the housing conditions and environments of the poorer classes, and it was his positive conviction that the money should be spent in this way. The disease did not develop unless the appropriate conditions were present, and he believed that altogether too much attention was now given to the matter of microbes. Whether there were more or fewer microbes about, tuberculosis always developed where there was the proper soil, and the one essential thing, therefore, was to do away with this by providing healthful housing conditions, fresh air, etc. As to banishing people from their homes, this was entirely unnecessary, and he thought the general hospitals could be much better devoted to the treatment of cases which they could really benefit. As to treatment, thirty years ago the elder Flint had declared that tuberculosis was a self limited disease. A certain number of patients would recover, and others would die, whatever plan of treatment was pursued. In spite of all that had been done toward "stamping out the great white plague," Dr. Robinson could not see that there had been much practical result. To his mind the benefit derived from sanatorium treatment was largely counterbalanced by the separation of the patient from his family and customary environment and by the depressing influences incident to such institutions. Personally, he had learned much more from private cases than from those in hospital practice. It was not necessary or desirable to send our patients to sanatoria, and it was his deliberate conclusion that the best results could be obtained from the systematic use of creosote, internally and by inhalation.

Dr. Leopold Rosenberg, of the Tuberculosis Sanatorium of the Montefiore Home, at Bedford, N. Y., said that, although his day's work was with curable cases, he recognized that proper treatment for advanced cases was necessary, and was in accord with Dr. Flick and Dr. Hatfield as to the advantages of admitting them to general hospitals. As to Dr. Pottenger's position in regard to acquired immunity, he must say that he saw cases of healed lesions in which the patient afterward had tuberculosis afresh. He did believe, however, in the acquired immunity of races, as pointed out by Dr

Woods Hutchinson some time ago. In cities like New York and Chicago the Jews were much less liable to the disease than the Irish, for instance, and this was believed to be due to the fact that the Jews for centuries had been confined to narrow quarters in the cities of Europe, and had thus acquired a large amount of immunity. Those interested in immigration were hopeful that in time the people coming over would acquire immunity. He was not quite so optimistic as Dr. Pottenger, as to the advantages of tuberculin. It was true that some patients appeared to do somewhat better under the use of this agent, but, at the same time, he had seen some cases thus treated which had relapsed. It was certainly a very empirical method of treatment, and it would continue to be so until the laboratory workers had furnished us with a tuberculin of standard potency.

Dr. Ira Van Giessen said he was convinced that a good deal of the bacterial theory of disease was incorrect, and what he objected to was making a scapegoat of the tubercle bacillus. The fear of this often amounted to hysteria, and the tuberculous subject was looked upon as a leper. As for thinking we could get rid of tuberculosis by getting rid of the bacillus, this he could not believe. Every man was the architect of his own misfortune in contracting tuberculosis, and it was to the conditions to which such a one was exposed that we had to look for the source of the trouble. Again, he could not see why we should employ tuberculin in this disease. It seemed to him entirely unphilosophical, and he thought we might as well begin first treatment to the injured by knocking the patient over the head with a club.

Meeting held in the Borough of Queens, April 4, 1910.

Dr. Neil Orrin Fitch in the Chair.

A Talk on Thoracic Surgery.—This was given by Dr. Willy Meyer, and was profusely illustrated with diagrams, photographs, and specimens. A new interest in this branch of surgery, he said, was created by the introduction in 1904 of the so called differential pressure methods by Sauerburg, of Breslau, and simultaneously by Brauer, of Marburg. Before this, the chief thing that interfered with the success of thoracic operations was the occurrence of acute pneumothorax, which was very apt to prove fatal. Even at the present day some bold surgeons disregarded this danger, and operated in the old way; but their work was attended with a high mortality, as quite a number of patients died from the effect on the heart. A recent advance had been made by the revival and perfecting, by Meltzer, of the Rockefeller Institute, of the method of intratracheal insufflation. But the real progress in thoracic surgery dated from the use of differential air pressure, and by means of it a portion of the body which before had been practically closed to surgical invasion was opened up for successful operating. This matter was still in an undeveloped stage, however, as everything had to be worked out by experiments on animals, and it required a long series of patient and careful investigations before it was prudent to apply the methods in the case of human subjects. Still, admirable results had already been achieved, and the treatment of diaphragmatic hernia was cited as an example of what could be accomplished by this new surgery. The speaker here referred to the brilliant work done by Carrel in the surgery of the bloodvessels, and expressed his conviction that the day would come, after the matter had been worked out by many experiments, when it would be possible to control aneurysm of the aortic arch.

As to the lungs, in pneumonia and tuberculosis as a rule nothing was to be expected from surgery, and these diseases must still be left to the domain of medicine. Yet bronchiectasis frequently followed acute pneumonia. Unfortunately, it was usually a multiple affection, but it belonged to the realm of surgery. So, too, did the abscesses resulting from tuberculosis, which might be treated by either extrathoracic or intrathoracic operations. Affections of the lungs, therefore, constituted a kind of borderland between internal medicine and surgery. Having stated that a pulmonary lobe could be starved by the ligation of the bloodvessels supplying it, he went on to say that what clearly belonged to surgery was the treatment of new growths, such as carcinoma and sarcoma. Here it was of the utmost importance that the medical attendant should make an early diagnosis, and when this had been done the chest could be opened and excision practised. Pneumectomy was the preferable procedure, but if this could not be done, resection might be resorted to. In describing the operation of excising a lobe of the lung, Dr. Meyer stated that all work of this kind was now done on the same basis as abdominal surgery. Out of twenty-one dogs upon which he had preformed pneumectomy, seventeen had been saved. Total extirpation of a pulmonary lobe, however, was attended with considerable danger in the human subject. In a young patient who had been sent to him by Dr. Pisek death had resulted, not from hæmorrhage, but from interference with the vagus, causing heart failure. Branches of the vagus might be cut, but they should never be ligated. The two principal operations on the lungs were extirpation and resection. Surgery was also of service in the removal of foreign bodies lodged in a bronchus. After such a body had been located by means of the x ray, the bronchus could be opened and the foreign body removed.

The same remarks applied to foreign bodies in the œsophagus. If the body could not be removed from above, it was very dangerous to attempt to push it down into the stomach, unless this could be readily effected, since it might cause perforation of the œsophagus. The principal service which would be rendered by surgery in the œsophagus was in the extirpation of new growths, and it was a noteworthy fact that cancer of this part was the least malignant of all such neoplasms. He was confident that within the next ten years we should be in possession of efficient methods for treating œsophageal cancer, and in this connection he described a new œsophagogastrostomy. He had tested the feasibility of this procedure by experiments on dogs, but he was free to say that he had met with many disappointments. In cancer of the œsophagus, as elsewhere, if an operation was to be successful, it

was of prime importance that the diagnosis should be made early, and in determining the condition present the so called exploratory thoracotomy was to be unqualifiedly commended. This, he thought, should be as safe as the exploratory laparotomy now so commonly practised, and if a cancerous growth was discovered, it could then be immediately excised. If the growth involved branches of the pneumogastric nerve, these should be pushed aside, and not otherwise interfered with; and it was entirely practicable to do this if the case was taken in hand sufficiently early. Later, great risk from the operation, due to injury of the vagus, was added to the danger of a recurrence of the malignant growth and its fatal termination. So far, he regretted to say, all his cases had come too late to save the patient's life. To-day the treatment of cancer of the cardia was just as insufficient as that of the œsophagus; but here, too, he believed, the time would come when successful methods of operating would be devised.

A number of photographs were shown and explained which illustrated the use of the chambers for operating under both positive and negative air pressure. In the case of dogs it seemed to be immaterial which of these was employed, but for the human subject the problem had not yet been fully worked out. Recently Dr. Meyer had devised a combined chamber, divided into two parts, so that either positive or negative pressure could be used at pleasure. It was sixteen feet in length, and sufficiently light to be readily moved from one room to another, having an iron frame and walls composed of balloon material. In conclusion, he emphasized the importance of having a supplementary apparatus for maintaining the pressure in case of accident, so that the patient should not be exposed to danger by the sudden failure of the power. In the German Hospital he had two sets of machinery, one supplied by the public electric current and the other by the hospital current. There was even a hand apparatus for use in case of the failure of both of these.

Spasmodic Respiratory Affections in Early Life, with Special Reference to Diagnosis and Treatment.—This paper was read by Dr. Godfrey R. Pisek, who said it was his purpose to consider as a correlated group all affections in children marked by reflex spasm of some portion of the respiratory tract. This would include all spasmodic respiratory affections except those caused by specific infection or purely anatomical conditions, in accordance with Finkelstein's conception of the spasmophile diathesis—that it was a constitutional anomaly manifested by a measurable mechanical and electrical overexcitability of the nervous system, which produced a pathological predisposition to certain partial and general clonic and tonic convulsions. In addition to laryngospasm, tetany, and eclampsia, considered by the Germans as spasmophilic conditions, Dr. Pisek would include in this group spasmodic laryngitis and tracheitis and bronchial asthma, since these also were the result, directly or indirectly, of exaggerated irritability of the nervous system, and exhibited the same hereditary factors. They were most often found in rhachitic children or at least those who had suffered from disturbed metabolic processes, and in this class of cases, in all of which there was an unstable nervous equilibrium, the peripheral nerves were liable to greater irritation from minor causes. The symptoms developed in these spasmodic conditions, therefore, were the result of reflex action, producing defective oxygenation by contracting the smooth muscles and thus narrowing the lumen of the respiratory tube. Such normal conditions, he said in passing, as a certain amount of retraction at the point of the diaphragm in young children and a modified Cheyne-Stokes breathing not infrequently observed in the new born had often been erroneously connected with respiratory diseases.

Laryngospasm was a distinct type, and should not be confounded with congenital laryngeal stridor, an extremely rare anatomical condition, or with spasmodic croup, tracheal spasm, or the spasmodic condition found in pertussis. It was characterized by spasmodic attacks affecting the glottis and the neighboring laryngeal muscles, and in this affection we had a prolonged inspiration, with a crow or stridor, which provoked into activity all the accessory muscles of respiration, accompanied by a sinking of the larynx; while the expiration which followed, with a raising of the larynx, was gentle and quiet. In tracheal spasm, on the other hand, there was an expiratory stridor, with restricted movements of the larynx, and the head was held forward, instead of backwark, as in laryngeal spasm. Congenital laryngeal stridor, again, was distinguished by the fact that it occurred in the first few weeks of life, in otherwise healthy children. Here the dyspnœa was not marked, while the stridor was heard almost constantly. Occasionally œdema of the glottis or a retropharyngeal abscess, causing dyspnœa through mechanical action, had to be distinguished from laryngospasm. The latter condition would make itself apparent when a suitable tongue depressor was used, and the finger, inserted into the mouth, would feel a doughy, fluctuating mass. Œdema of the glottis was not so readily detected, unless the examiner had previously accustomed himself to digital exploration in this region.

Although the symptoms of spasmodic laryngitis were familiar to most, this affection was sometimes confounded with laryngospasm, or laryngismus stridulus. In the latter, however, there was an entire absence of fever, cough, and rhinitis, and the attacks, which were of but momentary duration, recurred much more frequently than in spasmodic laryngitis. Again, laryngospasm was most frequently found in children under two years, while spasmodic laryngitis rarely occurred under this age. The spasm could be relieved by a momentary inhalation of chloroform, but if spasm was due to diphtheritic membrane, it would persist. In distinguishing spasmodic laryngitis from pertussis in the early stages we might be materially aided by a leucocyte count, for, in pertussis the white cells were three times as numerous as in the normal child.

Finally, we had to consider bronchial asthma in this connection. The children of asthmatic or so called rheumatic parents were particularly predisposed to this spasmophilic tendency, and if there was present any focus of irritation in the upper respiratory tract, such as adenoids, the attacks would

be more frequent and severe. Rickets and previous pulmonary diseases, especially pertussis, increased the susceptibility, while a study of the early history of these young asthmatics would show that they were of the neurotic habitus and that many of them suffered from skin diseases, such as eczema and chronic urticaria. The attacks did not differ greatly from the adult type, except that spasm of the glottis was more apt to occur and produce cyanosis, and that the intensity of the sibilant and sonorous râles and expiratory rhonchi was proportionately greater than in adults. The affection might possibly be confused with a diffuse bronchopneumonia or with cardiac asthma, but if the sputum was examined, confirmation of the diagnosis would be found in its mucus contents containing Curschmann's spirals and Charcot-Leyden crystals.

The treatment of these respiratory conditions, the speaker said, could be considered as a whole if the spasmophilic theory was accepted. The indications were twofold: the relief of the spasm and the removal of irritations which induced the attacks. The antispasmodics which had proved most effective in his hands were antipyrine and bromides in combination. Two grains of the former with three grains of the latter, given every three to four hours for a few doses (depending on the severity of the attack), to a child of two years, would produce results and yet cause no depression worthy of note. In bronchial asthma a 2.8 per cent. solution of fluoroform, given in drachm doses every two hours in the intervals between the attacks, would be found to lessen the severity and frequency of the paroxysms. Laryngospasm was ameliorated by small doses of the bromides until the underlying condition could be cleared up. In spasmodic laryngitis the old method of giving ipecac until emesis was produced could not be improved upon, and during the day doses of 1/100 grain of tartar emetic with 1/20 grain of ipecac should be given to abort another attack. Steam inhalations were soothing, but scarcely necessary. Rhinitis or bronchitis, if present, should be carefully treated in these children. Of paramount importance in all these conditions was the removal of adenoid vegetations or abnormities in Waldeyer's ring. Eczema and urticaria were usually the result of overfeeding, especially with carbohydrates, and their abolition was demanded to allay peripheral nerve irritation. All measures, however, would fail in effecting a complete cure until, (1) the child learned to breathe properly (a matter requiring systematic gymnastics of the lungs), and (2) arrangements had been made for it to live an outdoor life in a pure atmosphere.

The Etappen Treatment of Bow Legs and Knock Knees.—This paper was by Dr. CARL R. KEPPLER. In the ordinary slight distortions of this character, he said, there could be no doubt that manipulation and the raising of the soles of the shoes to produce the opposite gait were sufficient to overcome the irregularity; but when the bending had become more pronounced, this was not the case, and only active or systematic corrective effort, combined with appropriate constitutional management, could accomplish the desired result. The various corrective treatments which had been employed were: (1) with braces; (2) operative measures (osteotomy or osteoclasis) and plaster of Paris retention; (3) putting the legs up in plaster and the use of manual pressure until the plaster had set; (4) the Etappen treatment, which combined the plaster of Paris bandage with corrective wedging. The objections to the brace treatment were that it was expensive, that the child was apt to be brought for observation only at long intervals, and that the required continuous effect of the brace might be lost by its frequent removal at home. The operative treatment was usually curative if properly performed, but it required special skill and was attended with imaginary horrors in the minds of the laity. The plaster and manipulation plan was very slow in effect, and in the older and more pronounced cases was practically useless.

The method of plaster splinting combined with corrective wedging, the speaker said, was not origiual with himself. Dr. Sayre, of New York, had used it years ago, and Wolff, of Berlin, had described it, basing the treatment upon his law of bone construction and external conformation relative to its continuous function, by nature or force. The relegation of this method to comparative oblivion was peculiar when one considered its usefulness, for he had found it to be very effective. The difference from the older practice in Dr. Keppler's plan of treatment was that no anæsthetic was employed and that only a portion of the splint was divided. In the less marked distortions there was no difficulty in making the correction, and even in the very pronounced cases, at the age of five or six years, where eburnation had practically taken place, the force which could be applied at each successive correction was great enough to overcome all bony and ligamentous resistance. In fact, these older cases, although somewhat slower to respond, were on the whole more satisfactory to treat than the pliable limbs of the very young, because the correction was fully maintained after the bandage had been removed.

Having submitted and explained a number of tracings showing some of the results which had been obtained, he described the process of treatment as follows: The distorted legs, from the base of the toes upward (generally well up the thighs) were encased as snugly as possible in thin cotton wadding, and, in addition, bony prominences and the points subject to pressure were protected by felt or cotton squares. Over this dressing the plaster of Paris bandages were applied to the desired thickness, while the assistant held the foot in a slightly everted position in bow legs, and inverted in knock knees; maintaining the position until the plaster had set. The bandage, when finished, was from an eighth to a quarter of an inch thick, and held the foot at right angle flexion to the leg, with the knee extended. It reached as high up on the thigh as the condition demanded, naturally being carried higher in knock knee or complete bow leg than in the tibial type of bow leg. In the latter, later on in the treatment, as improvement took place, it was not necessary to include the knee and thigh, though in all cases the foot must be kept encased up to the end. As soon as the plaster had set, a transverse incision was made in the casing, opposite to the point of greatest deformity and on the concave aspect of this,

which extended over half the circumference of the splint and included its entire thickness. The plaster was then allowed to harden fully, which took about fifteen minutes, when manual correction was undertaken in the following manner: The leg, having been placed over the knee, the edge of a table, or a wooden block, with the undivided side of the bandage resting upon this, was grasped above and below the incision, and moderate corrective pressure was made. As this was being done, the undivided half of the splint acting as a hinge, the edges of the incised half separated, and the pressure was continued until sufficient correction (at first comparatively slight) had been effected, when a wooden wedge of suitable size was inserted between the gaping edges. The rest of the opening was filled with cotton, any irregularities in the undivided half were hammered out, and, finally, a few turns of a plaster of Paris bandage were made to hold the wedge in position. At the end of about two weeks the wedge was removed, greater correction made, and a larger wedge inserted, and this procedure was repeated afterward at the same intervals. Between treatments the child was permitted to run about and play as much as it liked, and this, of course, soiled the splint and wore out the foot portion rather soon; so that the entire plaster dressing had to be changed about every six weeks.

This treatment, the speaker said, should be carried out, if possible, without intermission until the distortions had been fully overcome, and this would take from two to six months, according to the character of the patient. If pressure sores developed, a rare occurrence, these should be healed before another corrective splint was applied. After the splint had been finally discontinued massage was advisable, and the case should be kept for some time under supervision. The ultimate results of the treatment appeared to be excellent. There was practically no atrophy, the muscles remaining firm and active, and the legs lengthened perceptibly. In no case had he observed any stiffness of the ankle or laxness of the knee joint after the final removal of the bandage. The distortion was corrected in its entirety, not simply at the point of greatest deviation, and, because there had been no separation, there was no chance of undue callus formation, with consequent interference with the circulation or nerve action, such as might follow osteotomy. Moreover, the twisting incident to the deformity, and one of its most annoying complications, was effectually overcome; while in the operative treatment, unless it was overcome during the operation, this rotation frequently rendered the result incomplete and unsatisfactory. Anterior bow legs had given the most trouble, on account of the low situation of the distortion, but in no instance had this method of treatment been attended with undue difficulty. The leverage was so great that all resistance could in time be overcome. The disadvantages of the plaster of Paris and corrective wedging treatment might be summed up as (1) the increased work incident to it, and (2) the somewhat long time required. The advantages were: (1) its cheapness; (2) its simplicity and ease of application; (3) the absolute control over the progressive correction afforded; (4) the absence of any dangers, such as those attending osteotomy; (5) the untwisting of the straightened legs.

In reply to a question by Dr. Lewis M. Silver as to the age limit for the treatment, Dr. Keppler said that his oldest patient had been seven years old and his youngest a year and a half.

Dr. Brainerd H. Whitbeck expressed the opinion that after the discontinuance of the bandage and wedging it would probably be advisable to take some precautions to prevent a recurrence of the deformity, such as the ordering of the raised shoe soles commonly used in slight cases of bow leg and knock knee, which might be worn for a year or so.

Letters to the Editor.

A DISGRACEFUL BID FOR PRACTICE.

477 Stone Avenue, Brooklyn, *September 1, 1910.*

To the Editor:

Inclosed please find a letter addressed in the English and Italian languages to every manager of a barber shop, soliciting patients. To my surprise, the other day my barber showed it to me, thus criticising the medical profession. It is too sad for the profession that a physician desiring to establish a genitourinary practice should adopt such means, and it is too low for a physician to apply to barbers for aid. Such a physician does not deserve any sympathy or any consideration even if he makes a success in his undertaking. He is injurious to the public and profession.

P. M. Miller, M. D.

[With the omission of the name and address, the English version of the inclosure, printed in imitation of typewriting, reads as follows:—

"To the Manager of this Barber Shop

"Dear Sir,

"I pay 25% commission for patients recommended to me. You receive the money within 24 hours after it is paid by the patient.

"One barber sends me between $200 and $300 business a month. Many send me smaller amounts. Most men in your profession can recommend some such cases.

"How much can you earn as commission?

"Recommend one case, and you will send me more. "Yours truly."]

Book Notices.

[*We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.*]

An Index of Symptoms, with Diagnostic Methods. By Ralph Winnington Leftwich, M. D., Late Assistant Physician to the East London Children's Hospital, etc. Fourth Edition. New York: William Wood & Co., 1910. Pp. xiv-451.

In this new edition the author has added a large number of signs and symptoms, given increased consideration to diagnostic methods, and explained and defined many of the terms used. The alpha-

betical arrangement has been continued, and the book is as compact as before. We feel that we are under a debt to the author for the painstaking work that so often assists our memory, and every student and practitioner will find it an invaluable aid.

Die Erkrankungen des Blinddarmanhanges (Processus Vermiformis). Von Prof. Dr. Med. CARL WINKLER, Privatdozent, I. Assistant am pathologischen Institut der Universität Breslau. Mit 10 Tafeln und 22 Abbildungen im Text. Jena: Gustav Fisher, 1910. Pp. vi—334.

The author has, with great industry, compiled this textbook on the diseases of the appendix, in which he also includes the parasites and the growths in the processus vermiformis. It makes very interesting reading, but can hardly be used as a reference book.

Diseases of Infancy and Childhood. Their Dietetic, Hygienic, and Medical Treatment. A Textbook Designed for Practitioners and Students in Medicine. By LOUIS FISCHER, M. D., Attending Physician to the Willard Parker and Riverside Hospitals, New York; Attending Pædiatrist to the Sydenham Hospital, etc. Third Edition. With Three Hundred and Three Illustrations, Several in Colors, and Twenty-nine Full Page Half Tone and Color Plates. Philadelphia: F. A. Davis Company, 1910. Pp. xxiii—980.

This is the third edition of Fischer's well known book on diseases of infancy and childhood, which, from its first publication in 1906, has been accepted by the medical profession as a standard work on pædiatry. The author states in his preface that the book has been thoroughly revised. We thus find that chapter IV of the ninth part has been entirely changed; the author speaks here of Flexner's antimeningitis serum and gives a lucid description of lumbar puncture. New articles have been added on scabies, indicanuria, pyuria, acetonuria, and diabetes; at the same time some of the others have been omitted. The author's ideas of infant feeding are well defined; he warns against the use of sterilized mik, as the prolonged heating destroys the enzymes and induces chemical changes of the vital principles, especially the albuminoids and the salts, thus causing general malnutrition, rhachitis, and scurvy. If certified milk can be procured, it is unnecessary to change the chemical character of the milk by prolonged heating, but if the source of the milk is doubtful, heating for ten minutes at from 140° to 150° F. is all that is necessary. The author pleads for natural feeding, and a new method for the preservation of human milk obtained from various mothers is described, and is, as the author states, a life saver of atrophic or marasmic infants. In "night terrors" the author does not mention that very often a full bladder is the source of the disturbance. Special attention should be called to Part XII—the book is divided into twelve parts and each part again into a number of chapters—called Miscellany. Here the reader will find chapters on dietary, on the adulteration of milk, the examination of gastric contents, the urine, bacteriological memoranda, anæsthetics, disinfection, and drugs, with a good list of prescriptions. It will be seen that the author here gives very good advice.

The illustrations are well selected and a list may me found on pp. XIII to XIX. The index, running through over thirty pages, is complete. The book will certainly keep its old friends and will find many new ones.

Spa Treatment. Selection of Patients and the Choice of a Suitable Spa. By NEVILLE WOOD, M. D., M. R. C. P. London: Adlard & Son, 1910. Pp. 59.

This volume includes the author's presidential address before the West London Medico-Chirurgical Society, with some sections from a paper contributed to the *Practitioner,* based on careful personal investigation. The book would be more useful if it were provided with an index of localities and of conditions best treated at certain resorts.

MEDICOLITERARY NOTES.

Magic numbers once played a great rôle in medicine, as they did in the pseudosciences of the past. At one period there was a serious study of iatromathematics, by which diseases were to be reduced to algebraical formulæ and cured or solved on paper. Perhaps our lucky number has at last been ascertained in 606, which is to inaugurate, it may be, a serious of fulminating cures.

* * *

Diana Belais writes a letter to the September *Cosmopolitan* in which she cites largely the experiments of Crile on dogs. They are not pleasant reading in a family magazine, any more than details from a hospital theatre or charnel house would be. The lady voices a complaint of antis in general that they are not admitted to witness these experiments. It is a good rule that excludes all morbidly minded persons. They might possibly be much disappointed at a close view of the experiments, which would be flat and uninteresting to any but skilled students and investigators. Great, however, is Diana of the Belaisians.

* * *

No dogs are worked all night in dusty cotton mills; we find no record of any being sold into white slavery; no kennel is so unsanitary as an old fashioned East Side tenement. On the other hand a private Pullman car was recently hired especially to bring a bull pup from San Francisco to New York. The charity organizations have great difficulty in raising a few five dollar bills, one of which will give a woman and two children two weeks in the country. The growing spirit of humanity will, however, soon make the children as comfortable as dogs.

* * *

It should not be forgotten that the physiological experiments carried out on homeless curs ultimately save the lives, not only of children, but of many a pet dog which would otherwise render its mistress childless and put her to great expense for suitable obsequies in a canine cemetery.

* * *

It does seem that an aviator who does reckless "stunts" which result in the killing and maiming of a number of spectators ought to be subjected, if not to a trial for manslaughter, at least to a gentle remonstrance. No one has seen fit to make any comment other than to advance the opinion that the bird man alluded to will, on account of his own peril, be more careful in future.

Nothing is more singular than the persistence in the United States of the cigarette superstition. Along with coffee, it is *omnino damnandus*. We have repeatedly voiced the opinion of the medical profession regarding the cigarette, which is by long odds the most innocuous form in which tobacco can be used. To comment on the taste displayed by the fanatical organizations of women who recently demanded of a young matron that she publicly deny her use of cigarettes would be out of our province, but it is amusing to see the feminine enthusiasts carried away by arguments which were first formulated and advanced by alarmed cigar manufacturers in the days of *Vanity Fair* and *Old Judge*, when cigarettes apparently threatened the cigar industry. The best ammunition against beer and whiskey was devised by distillers and brewers respectively, each anxious that his own alcoholic medium should not be misunderstood; it was a disastrous battle, for both antagonists soon found their guns turned against themselves by the rampant prohibitionists.

* * *

If each crusading matron were to look after her own particular brood, the results might be more satisfactory. But we do not believe that the human race will ever abandon the temperate use of alcohol, tobacco, or coffee, each of which meets some modern symptom inseparable from our civilization. The abuse of any of them is due to pathological conditions to be sought out and treated in the individual.

NEW PUBLICATIONS.

Cemach, J.—Differential-diagnostische Tabellen der inneren Krankheiten. München: J. F. Lehmann, 1910.

Tanzi, Eugenio.—A Textbook of Mental Diseases. Authorized Translation from the Italian by W. Ford Robertson, M. D., C. M., Pathologist to the Scottish Asylums, Edinburgh, etc., and T. C. MacKenzie, M. D., F. R. C. P. Edin., Medical Superintendent, Inverness District Asylum, etc. New York: Rebman Company, 1910. Pp. xvi-803. (Price, $7.)

De Giovanni, Achille.—Clinical Commentaries Deduced from the Morphology of the Human Body. Translated from the Second Italian Edition by John Joseph Eyre, M. R. C. P., L. R. C. S. I., D. P. H. Cambridge. Part General. New York: Rebman Company, 1910. Pp. xii-436. (Price, $4.50.)

Hinsdale, Guy.—Hydrotherapy. A Work on Hydrotherapy in General, its Application to Special Affections, the Technic or Processes Employed, and the Use of Waters Internally. Illustrated. Philadelphia and London: W. B. Saunders Company, 1910. Pp. 466. (Price, $3.50.)

Bland-Sutton, J., and Giles, Arthur E.—The Diseases of Women. A Handbook for Students and Practitioners. Sixth Edition. With 123 Illustrations. New York: Rebman Company, 1910. Pp. viii-554. (Price, $3.25.)

Bier, August.—Textbook of Hyperæmia as Applied in Medicine and Surgery. Only Authorized Translation from the Sixth German Revised Edition. With Thirty-nine Illustrations. New York: Rebman Company, 1910. Pp. xv-439. (Price, $4.)

Slade, Charles B.—Physical Examination and Diagnostic Anatomy. Illustrated. Philadelphia and London: W. B. Saunders Company, 1910. Pp. 146. (Price, $1.25.)

Morris, Robert T.—Dawn of the Fourth Era in Surgery. And Other Short Articles Previously Published. Philadelphia and London: W. B. Saunders Company, 1910. Pp. 145. (Price, $1.25.)

Seidell, Atherton.—The Solubilities of the Pharmacopœial Organic Acids and Their Salts. Hygienic Laboratory Bulletin No. 67. Washington, D. C.: Government Printing Office, 1910. Pp. 98.

Miscellany.

Fourth of July Injuries.—The *Journal of the American Medical Association* has published its eighth report presenting statistics of injuries recorded during the celebration of the Fourth of July. There were 2,923 injuries this year, a little more than half of last year's record. There were 2,792 nonfatal injuries this year, a little more than half (55 per cent.) of the total reported last year. Only seven persons were totally blinded this year, but thirty-three lost one eye each, twenty-six lost legs, arms, or hands, and 114 lost one or more fingers. There were 72 cases of tetanus, of which 67 ended fatally. Besides the sixty-seven deaths due to tetanus, sixty-four persons were killed by various forms of fireworks, making a total of 131, a decrease of eighty-four below last year and thirty-two less than in 1908. Nineteen people were killed outright this year by firearms, eleven by explosions of powder, bombs, or torpedoes, three by cannon, and three by various causes, as blood poisoning, explosion of chemicals, etc., while twenty-six, mostly little girls, were burned to death by fire from fireworks, in several instances, from the so called "harmless" varieties.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of and deaths from cholera, plague, smallpox, and yellow fever were reported to the surgeon general of the United States Public Health and Marine Hospital Service for the week ending September 2, 1910:

Place.	Date.	Cases.	Deaths.
	Cholera—Foreign.		
Germany—Spandau	Aug. 29	2	1
India—Bombay	July 19-26		3
India—Calcutta	July 3-9		11
India—Negapatam	June 18-July 1		48
Java—Batavia	June 9-16	40	30
Russia—Astrakhan, government—Astrakhan	July 10-16	110	41
Russia—Baku, government	July 10-16	69	34
Russia—Baku	July 10-16	18	9
Russia—Bessarabia	July 10-16	25	8
Russia—Black Sea Province	July 10-16	29	19
Russia—Don, territory	July 10-16	1,208	595
Russia—General	May 8-July 9	13,582	5,708
Russia—General	July 10-16	7,295	8,300
Russia—General	July 17-Aug. 5	32,715	14,424
Russia—Kertsch	July 10-16	107	49
Russia—Kharkov, government	July 10-16	491	184
Russia—Khazan, government	July 10-16	21	6
Russia—Kherson, government	July 10-16	316	114
Russia—Kief, government	July 10-16	47	16
Russia—Kostroma, government	July 10-16	9	8
Russia—Kuban, territory	July 10-16	1,449	797
Russia—Kursk, government	July 10-16	36	22
Russia—Moscow, government	July 10-16	3	1
Russia—Nizchninovgorod, government	July 10-16	41	16
Russia—Odessa	July 10-16	60	35
Russia—Orel, government	July 10-16	3	2
Russia—Padolien, government	July 10-16	5	1
Russia—Pensa, government	July 10-16	2	2
Russia—Poltava, government	July 10-16	230	101
Russia—Rjasan, government	July 10-16	62	24
Russia—Rostov on Don	July 10-16	207	65
Russia—Samara, government	July 10-16	297	143
Russia—Saratov, government	July 10-16	318	127
Russia—Simbirsk, government	July 10-16	47	14
Russia—Stavropol, government	July 10-16	128	67
Russia—St. Petersburg, government	July 10-16	1	1
Russia—St. Petersburg	July 10-16	37	12
Russia—Tambov, government	July 10-16	106	32
Russia—Taurida, government	July 10-16	448	166
Russia—Tchernigov, government	July 10-16	94	24
Russia—Terek, territory	July 10-16	122	65

Place.	Date.	Cases.	Deaths.
Russia—Tiflis, government, Tiflis	July 10-16	102	36
Russia—Trans-Caspian, territory	July 10-16		1
Russia—Tula, government	July 10-16	1	1
Russia—Ufa, government	July 10-16	1	1
Russia—Vitebsk, government	July 10-16	2	
Russia—Yaroslav, government	July 10-16	3	2
Russia—Yekaterinislav, government	July 10-16	1,040	459
Straits Settlements—Singapore	July 3-16	11	10
Cholera—Insular.			
Philippine Islands—Batangas	July 3-9	5	1
Philippine Islands—Bulacan	July 3-9	63	43
Philippine Islands—Manila	July 3-9	20	15
Philippine Islands—Nueva Ecija	July 3-9	16	13
Philippine Islands—Pampanga	July 3-9	10	10
Philippine Islands—Pangasinan	July 3-9	152	140
Philippine Islands—Rizal	July 3-9	6	4
Yellow Fever—Foreign.			
Brazil—Manaos	July 23-Aug. 6	9	9
Brazil—Para	July 31-Aug. 6	13	8
Ecuador—Guayaquil	July 16-31	6	3
Mexico—Merida	Aug. 26		1
Plague—Foreign.			
Ecuador—Guayaquil	July 16-31	6	1
Egypt—Alexandria	July 9-Aug. 2	7	5
Egypt—Assiout, province	June 17-Aug. 4	5	1
Egypt—Galioobeeyeh, province	July 3-29	2	1
Egypt—Menouf, province	July 13-22	2	2
Egypt—Minieh, province	July 3-Aug. 3	6	
Egypt—Port Said	July 27-Aug. 2	9	2
India—Bombay	July 19-26		56
India—Calcutta	July 3-9		22
India—Kurrachee	July 17-23	13	14
India—Rangoon	July 10-16		40
Russia—Astrakhan, government—Khirgiz Steppe	June 26-July 7	13	12
Plague—United States.			
California—San Benito County—Holister		1	1
Smallpox—United States.			
Colorado	July 1-31	62	
District of Columbia	Aug. 14-20	1	
Florida	Aug. 7-13	5	
Indiana	June 1-30	76	
Louisiana—New Orleans	Aug. 14-20	4	
North Carolina	June 1-30	216	
Oregon—Baker County	May 1-31	2	
Oregon—Benton County	June 1-30	2	
Oregon—Linn County	Apr. 1-May 31	10	
Oregon—Multnomah County	May 1-31	1	
Oregon—Umatilla County	May 1-31	2	
Oregon—Union County	May 1-31	2	
Oregon—Wasco County	Apr. 1-30	2	
Oregon—Washington County	Apr. 1-June 30	3	
Oregon—Yamhill County	Apr. 1-June 30	15	
Smallpox—Foreign.			
Arabia—Maskat	July 19-23	1	
Argentina—Buenos Aires	May 1-31		68
Belgium—Antwerp	July 24-30	1	
Belgium—Ghent	July 24-30		1
Brazil—Babia	June 25-July 15	43	33
Brazil—Manaos	Aug. 6		Present
Brazil—Santos	June 19-25		1
Brazil—Sao Paulo	June 19-25		2
Egypt—Cairo	July 31-Aug. 5	1	
France—Paris	July 31-Aug. 6	2	
Germany—General	July 31-Aug. 6	2	
Great Britain—London	July 24-Aug. 6	2	
Italy—General	Aug. 1-7	2	
India—Bombay	June 19-26		2
Java—Batavia	July 9-16	2	
Malta	July 24-30	1	1
Mexico—San Luis Potosi	July 31-Aug. 6		1
Portugal—Lisbon	Jan. 1-June 25		105
Portugal—Lisbon	July 31-Aug. 6	67	
Russia—Libau	July 24-31	3	
Russia—Odessa	July 24-30	1	
Russia—Riga	July 31-Aug. 6	28	
Russia—St. Petersburg	July 19-23	14	9
Russia—Warsaw	May 22-28		4
Siberia—Vladivostok	June 22-July 5	3	
Spain—Barcelona	Aug. 2-8		1
Spain—Madrid	July 1-31		2
Straits Settlements—Singapore	July 10-16	7	5
Zanzibar—Zanzibar	July 15-21		7

Public Health and Marine Hospital Service:

Official list of changes in the stations and duties of commissioned and other officers in the United States Public Health and Marine Hospital Service for the seven days ending August 31, 1910:

ANDERSON, JOHN F., Passed Assistant Surgeon. Directed to proceed to Chicago, Ill., and Milwaukee, Wis., upon special temporary duty. Detailed to attend the annual meeting of the American Public Health Association to be held in Milwaukee, Wis., September 5-9, 1910.

BECK, J. E., Pharmacist. Relieved fom duty at Honolulu, Hawaii, and directed to proceed to Savannah (Quarantine), Ga., and report to the medical officer in command for duty and assignment to quarters.

BIERMAN, C. H., Pharmacist. Granted four days' extension of leave of absence from July 26, 1910, on account of sickness.

BOYD, FRANK, Acting Assistant Surgeon. Granted twenty days' extension leave of absence from May 27, 1910, on account of sickness.

FOSTER, A. D., Passed Assistant Surgeon. Granted ten days' leave of absence en route to station. Granted thirty days' leave of absence from August 30, 1910.

FROST, W. H., Passed Assistant Surgeon. Detailed to attend the meeting of the State Board of Health at Des Moines, Iowa, August 17, 1910. Directed to proceed to Britt, Iowa, upon special temporary duty.

GAHN, HENRY, Pharmacist. Granted sixteen days' leave of absence from August 22, 1910.

GARDNER, C. H., Surgeon. Granted one month's leave of absence from September 1, 1910.

GASSAWAY, J. M., Surgeon. Granted one month's leave of absence from August 7, 1910, on account of sickness.

GOLDBERGER, J., Passed Assistant Surgeon. Directed to proceed to Reedy Island Quarantine Station upon special temporary duty.

GRIMM, R. M., Assistant Surgeon. Granted four days' leave of absence from September 1, 1910.

HERTY, F. J., Pharmacist. Granted one day's leave of absence August 22, 1910, under paragraph 210, Service Regulations.

KING, W. W., Passed Assistant Surgeon. Relieved from duty at Ellis Island, N. Y., and directed to proceed to Naples, Italy, and report to Surgeon H. D. Geddings for duty.

KNIGHT, CARLISLE P., Assistant Surgeon. Relieved from duty at Buffalo, N. Y., and directed to proceed to Ellis Island, N. Y., and report to the Chief Medical Officer for duty.

MCCLINTIC, F. B., Passed Assistant Surgeon. Granted six days' leave of absence from August 22, 1910.

MCDANIEL, S. E., Acting Assistant Surgeon. Granted five days' leave of absence from August 14, 1910, under paragraph 210, Service Regulations.

MCGINNIS, R. H., Acting Assistant Surgeon. Granted nineteen days' leave of absence from September 11, 1910.

MCLAUGHLIN, A. J., Passed Assistant Surgeon. Directed to report to Surgeon Rupert Blue for duty August 13, 1910.

MOORE, DUNLOP, Passed Assistant Surgeon. Leave of absence for fourteen days from August 10, 1910, amended to read ten days from August 18, 1910.

OTT, C. R., Pharmacist. Directed to report to Surgeon P. C. Kalloch, chairman board of medical examiners, to determine fitness for promotion to grade of pharmacist of Class 2.

ROBERTS, NORMAN, Passed Assistant Surgeon. Granted twelve days' leave of absence from September 6, 1910.

ROBERTSON, HERMAN, Acting Assistant Surgeon. Granted six months' leave of absence without pay from September 1, 1910.

RODMAN, J. C., Acting Assistant Surgeon. Granted seven days' leave of absence from August 30, 1910.

ROSELLO, M. M., Acting Assistant Surgeon. Granted five days' leave of absence from June 27, 1910, under paragraph 210, Service Regulations.

RUSH, JOHN O, Acting Assistant Surgeon. Leave of absence granted August 6, 1910, amended to read fourteen days from August 13, 1910, with pay, and twenty-eight days from August 27, 1910, without pay.

STIMSON, A. M., Passed Assistant Surgeon. Granted fourteen days' leave of absence from September 6, 1910.

VOGEL, C. W., Passed Assistant Surgeon. Leave of absence for fifteen days from August 10, 1910, amended to read twelve days from August 10, 1910.

WEITGENANT, WAYNE W., Pharmacist. Directed to proceed to Chicago, Illinois, and report to the medical officer in command for duty and assignment to quarters.

WOLFE, J. A., Pharmacist. Granted six days' leave of absence from August 23, 1910, under paragraph 210, Service Regulations.

Appointment.

Wayne W. Weitgenant appointed a pharmacist of the third class August 23, 1910.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending September 3, 1910:

Baily, Howard H., Captain, Medical Corps. Detailed to act as one of the Judges of the Inter-Coal Co. competition in the application of first aid to the injured,' to be held September 17, 1910, at Scranton, Pa.

Baker, Frank C., Major, Medical Corps. August 27th, left Fort Moultrie, S. C., en route to Camp at Fort Benjamin Harrison, Indiana.

Birmingham, Henry P., Lieutenant Colonel, Medical Corps. August 29th, leave of absence extended twenty days.

Bundesen, H. N., First Lieutenant, Medical Reserve Corps. August 30th, granted fifteen days' leave of absence.

Darnall, M. H., Lieutenant, Medical Reserve Corps. August 28th, left Fort Washington, Md., on ten days' leave of absence.

DeLaney, M. A., Captain, Medical Corps. Detailed to act as one of the Judges of the Inter-Coal Co. competition in the application of first aid to the injured, to be held September 17, 1910, at Scranton, Pa.

Hallett, Harley J., Lieutenant, Medical Reserve Corps. Ordered to proceed to Fort Hamilton, N. Y., August 29th for temporary duty.

Hill, Eben C., Lieutenant, Medical Corps. August 26th, ordered to proceed to Pine Camp, N. Y., for duty.

Howell, Park, Captain, Medical Corps. August 27th, granted leave of absence for two months.

Ireland, M. W., Major, Medical Corps. August 31st, left Washington, D. C., on eighteen days' leave of absence.

Kierulff, H. Newton, Lieutenant, Medical Reserve Corps. August 29th, relieved from duty at Fort Missoula, Montana, and ordered to proceed to his home for further orders. Same date granted leave of absence for one month and four days.

Long, Charles J., D. S., August 29th granted two months' leave of absence. August 29th reports for temporary duty at Madison Barracks, N. Y., from Pine Camp, N. Y.

Lynch, Charles, Major, Medical Corps. Detailed to act as one of the Judges of the Inter-Coal Co. competition in the application of first aid to the injured, to be held September 17, 1910, at Scranton, Pa.

Mabee, James I., Captain, Medical Corps. August 28th, left Jefferson Barracks, Mo., on eight days' leave of absence.

Marietta, S. U., Lieutenant, Medical Reserve Corps. August 24th, left Fort Des Moines, Iowa, en route to Camp at Fort Benjamin Harrison, Indiana.

McCaw, W. D., Lieutenant Colonel, Medical Corps. August 31st, left Washington, D. C., on thirty days' leave of absence.

Nichols, Henry J., Lieutenant, Medical Corps. Upon expiration of present leave of absence, will repair from duty in New York City to this city and report in person to Colonel Louis A. La Garde, Medical Corps, president of the Army Medical School, for duty as assistant instructor in clinical microscopy and bacteriology at that school.

Norman, Seaton, Lieutenant, Medical Reserve Corps. August 27th, ordered to proceed to Fort Huachuca, Arizona, for temporary duty.

O'Connor, R. P., Major, Medical Corps. August 27th, left Fort Screven, Ga., en route to Camp at Fort Benjamin Harrison, Indiana.

Shaw, Henry A., Major, Medical Corps. August 25th, granted twenty days' leave of absence.

Slater, Ernest F., Lieutenant, Medical Reserve Corps. August 31st, granted thirty days' leave of absence.

Talbott, E. M., Captain, Medical Corps. August 31st, upon return to Fort D. A. Russell, Wyoming, will proceed to Fort Riley, Kansas, for duty at Camp of Instruction in command of one half of Company "A," Hospital Corps.

Tenney, Elmer S., Lieutenant, Medical Reserve Corps. August 31st, relieved from duty at Fort Strong, Mass., and ordered to proceed to the Philippine Islands for duty on the transport sailing from San Francisco, California, about November 5, 1910.

Wolfe, Edwin P., Major, Medical Corps. August 27th, ordered to proceed from New York City to Philadelphia, Pa., on business connected with the Medical Department of the Army. Major Wolfe will also proceed from New York to Middletown, Conn., on business connected with the Medical Department of the Army.

Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending September 3, 1910:

Cather, D. C., Passed Assistant Surgeon. Detached from the Naval Academy and ordered to the *Iowa.*

Fitts, H. B., Medical Inspector. Placed on the retired list from August 23, 1910.

Grove, W. B., Surgeon. Detached from the naval training station, Newport, R. I., and ordered to duty at the Naval Medical School Hospital, Washington, D. C.

Hermesch, H. R., Assistant Surgeon. Detached from the *Montana* and ordered to temporary recruiting duty at Knoxville, Tenn.

Jenkins, H. E., Assistant Surgeon. Detached from the *Franklin* and ordered to the *Montana.*

Leys, J. F., Surgeon. Detached from temporary duty in the Bureau of Medicine and Surgery, Navy Department, and ordered to the naval training station, Newport, R. I.

Pryor, J. C., Surgeon. Detached from the navy yard, Pensacola, Fla., and ordered to the Bureau of Medicine and Surgery, Navy Department.

Thomas, G. E., Assistant Surgeon. Detached from the *Dubuque* and ordered to temporary duty at the naval hospital, Mare Island, Cal.

Births, Marriages, and Deaths.

Married.

Auerbach—Stribbling.—In Chicago, Illinois, on Saturday, August 20th, Leo Berthold Auerbach, M. D., of El Paso, Texas, and Miss Harriet Stribbling, of Chicago.

Bigelow—Wright.—In Independence, Iowa, on Friday, August 19th, Oliver Perry Bigelow, M. D., and Miss Emma K. Wright.

Ladd—Barton.—In Worcester, Massachusetts, on Thursday, August 18th, William Edward Ladd, M. D., and Miss Helen Katherine Barton.

Prowitt—Meyer.—In Washington, Pennsylvania, on Monday, August 22d, Homer Persell Prowitt, M. D., and Miss Elinor Meyer.

Died.

Amory.—In Nahant, Massachusetts, on Saturday, August 27th, Dr. Robert Amory, aged sixty-eight years.

Barnum.—In Sedalia, Missouri, on Tuesday, August 30th, Dr. Harold L. Barnum, aged thirty-two years.

Branch.—In Bunkie, Louisiana, on Thursday, August 25th, Dr. William G. Branch, aged forty-nine years.

Carpenter.—In Deep Valley, Pennsylvania, on Saturday, August 27th, Dr. Thomas M. Carpenter, aged sixty-nine years.

Day.—In Butler, New Jersey, on Tuesday, August 30th, Dr. Harry Vroom Day, aged fifty-seven years.

Frutchey.—In Chicago, Illinois, on Monday, August 29th, Dr. Foster Frutchey, aged forty-five years.

Goessmann.—In Amherst, Massachusetts, on Thursday, September 1st, Dr. Charles A. Goessmann.

Green.—In Louisville, Kentucky, on Tuesday, August 30th, Dr. Joseph T. Green, aged forty-two years.

Johnson.—In Sharon, Pennsylvania, on Sunday, August 28th, Dr. Samuel C. Johnson, aged fifty-seven years.

Lougarre.—In Moreauville, Louisiana, on Sunday, August 28th, Dr. Tobie L. Lougarre, aged seventy-two years.

Sebring.—In Garrett, Indiana, on Thursday, August 25th, Dr. David A. Sebring, aged eighty-three years.

Stuart.—In Brooklyn, New York, on Sunday, September 4th, Dr. Francis H. Stuart, aged sixty-four years.

Taylor.—In Richmond, Indiana, on Friday, August 26th, Dr. James C. Taylor.

Tracy.—In Sylvania, Pennsylvania, on Tuesday, August 30th, Dr. Elijah Tracy, aged eighty-five years.

Wands.—In Indianapolis, Indiana, on Thursday, August 25th, Dr. William Wands, aged seventy-four years.

Watkins.—In Dansville, New York, on Wednesday, August 31st, Dr. Americus V. Watkins, aged sixty-six years.

New York Medical Journal

INCORPORATING THE

Philadelphia Medical Journal and The Medical News

A Weekly Review of Medicine, Established 1843.

VOL. XCII. No. 12. NEW YORK, SEPTEMBER 17, 1910. WHOLE No. 1659.

Original Communications.

THE SURGICAL IMPORTANCE OF THE OMENTUM.*

BY L. JAY HAMMOND, M. D.,
Philadelphia,
Surgeon to the Methodist Episcopal Hospital.

The omentum, as an organ of surgical lesions, has not attracted the attention, in literature at least, that its importance would seem to demand, as it is within the immediate past only that it has been at all referred to in surgical literature. Indeed, prior to 1883, little or nothing had been contributed toward an understanding of either its development, anatomy, physiology, or pathology that had not already been described by Hippocrates. From the report of Braun's classically studied case up to the present, no more than two papers have annually appeared to widen its scope of surgical importance, or to stimulate further investigations.

Embryology:—The digestive tract consists of a single tube at the beginning of the second month of fœtal life. The dilatation of the upper part of this tube becomes the future stomach. It has two attachments, the anterior and the posterior mesogastria. The posterior mesogastrium becomes rudimentary and the spleen carries the attachment of this membrane to the left, forming thereby the cavity of the lesser peritonæum. At or soon after birth there is a cohesion of the posterior layer of the omental folds with the transverse mesocolon, through this the transverse colon seemingly becomes a part of the descending layer of the omentum. The free edge of the gastrohepatic omentum does not grow proportionately, but remains as the anterior limit of the foramen of Winslow.

Anatomy:—The great omentum consists of four layers of peritonæum. Two being in the upright position, anterior, and two posterior. The latter having between them the transverse colon, and thus forming the transverse mesocolon. Enclosed between the double anterior and posterior folds is part of a space known as the lesser sac of the peritonæum communicating with the greater sac by means of the foramen of Winslow. In the fœtus the cavity of the lesser sac can easily be traced down into the dependent fold of the great omentum, but in the adult all four folds are usually completely welded together. In the newly born child at full term, it will be seen to be relatively much shorter than in the adult. There is a tendency for the omentum to become longer, and therefore hang lower on the left side than on the right, having commenced as a left lateral pouching of the mesogastrium. The growth of the omentum after birth is out of proportion to the actual growth in length of the body. In relation to the intestines and other viscera of the abdominal cavity, it varies greatly in different subjects, it completely hides from view the small intestines, in about thirty-three per cent. of cases, in the absence of diseases, or abnormality of itself or other parts of the peritonæum, the greater bulk of it lay below the level of the umbilicus. Its length varies, measuring from the lower part of the transverse colon, it is found according to McAdams Eccles to be from three to thirteen and one half inches. Mr. Lockwood found that the epiploon in twenty cases under the age of forty-five, only one had the omentum long enough to project beyond the spine of the os pubis, and in only five others could it be brought down to the tip of the symphysis pubis. After forty-five years of age, it was the exception, rather than the rule to find an omentum which could not be pulled beyond the lower limits of the abdomen. According to Robinson, in ten per cent. of the cases, it may cover the cæcum, in twenty per cent. reach into the pelvis. It is found in three per cent. of all hernias. The actual position of this viscus in the abdominal cavity, is depending upon a variety of outside conditions, viz.: respiration; intraabdominal pressure; peristaltic movements of the intestines; dilatation of the stomach or transverse colon leading to shortening, distention of the small intestine, pushing it upward; enlargement of the liver, producing a downward displacement, advancing age encouraging a fatty infiltration. Abnormal conditions present within the abdominal cavity are ascites, uterine, ovarian, or other tumors. The thickness varies greatly, depending chiefly on the amount of adipose tissue it contains. On the other hand it may be exceptionally thin and transparent, especially in the young and emaciated. As age advances there is a tendency toward a greater deposition of fat. The omentum possesses a remarkable supply of bloodvessels; the arteries are large and numerous coming from the right and left gastroepiploic; the veins are tributaries of the superior mesenteric and the splenic, and empty into the portal vein. Gordon H. Dickinson states that no nerves have been demonstrated within the omentum, while Eccles says that the nerves are derived from the solar plexus through the splenic and hepatic plexuses.

The lymph streams are abundant and empty into the glands of the greater curvature of the stomach.

*Read before the Philadelphia County Medical Society, February 8, 1910.

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By Foster, this organ is considered the very beginning of the lymphatic system.

Physiology:—Investigations in the physiology of the omentum went no further with the early observers than to regard its function as being solely for the protection of the intestines against chill. Its more modern known functions, however, can be best dealt with under two heads. a. Its normal or true function. b. A mechanical function, or that part played by it in defending the other abdominal viscera against the invasion of septic particles. 1. It serves as a protection to the intestines. 2. It retains intraabdominal pressure. 3. It possesses, together with the portal and gastric, a reciprocal, collateral circulation, and has a circulatory relation with the liver and the stomach. 4. It favors peristalsis. 5. It aids digestion, both gastric and intestinal, by equalizing blood pressure. 6. It lubricates the intestines. 7. It causes leucocytosis and phagocytosis. 8. It regulates by a uniform pressure the intraabdominal blood pressure. 9. It is a lymphagogue. 10. By its mechanical pressure and free mobility it occludes abnormal apertures and normal hernial orifices under pathological conditions. 11. It acts as a place where excess of adipose tissue can be temporarily or permanently deposited.

Because of its rich blood supply and lymphatics, it rapidly absorbs fluids. Its veins, in cases of shock are usually greatly distended, and also in instances where portal obstruction exists. During digestion within the stomach, all the vessels of the mesogastrium are filled and apparently feed out blood to this organ during the act of digestion, as well as increase the amount of heat, which is always necessary in thorough digestion. Crile believes that the omentum plays an important part in the phenomenon of shock through splanchnic nerve influence. By means of venous anastomosis through adhesions, local congestion may be relieved through establishing a collateral circulation. Its large surface freely exposed to surrounding parts enables it to rapidly absorb fluids by the blood stream, while through the lymph vessels it is a free carrier of white blood corpuscles and encapsulated solid particles. Through active lymph formation and local proliferation, it readily attaches itself to infected parts, which by this means becomes walled over to be subsequently dealt with by the phagocytes, thereby protecting the general abdominal cavity against infection. Most of the phagocytes present in the peritonæum for its protection against septic products come through the omentum, and largely from the general circulation (chemotaxis). It is believed that either loss through operation or defect in development of this viscus renders one more liable to peritoneal infection. This is readily emphasized in young subjects, as surgeons repeatedly find that here the omentum takes no part in protecting the peritonæum against infection. Hæmolymph glands of the splenic type existing in its base supplement the spleen, if the latter is removed or its functions interfered with, this function only occurs when the circulation of the spleen is entirely cut off. The omentum gradually develops a capsule around it, inside of which it is in time completely absorbed. If the omentum is removed, after the circulation of the spleen is cut off, the organ cannot become encapsulated and the animal speedily dies. (Dickinson.)

Mechanical function:—The tendency is for a normally developed omentum to approach the seat of any inflammation that occurs within the abdominal cavity and become adherent to the diseased area, providing the inflammation is not too acute. This phenomenon is due to the wandering power rather than to its adhesive qualities, and Mr. Morison likens it to the movements of a jelly fish. This function is especially noted in cases of perforating ulcers of the stomach, intestines, abscesses of the appendix or uterine annexa which threaten rupture, and in intestinal wounds so complete as to prevent fæcal extravasation, and in mesenteric abscesses, ectopic gestations, etc. This function has led to the employment of this viscus as a graft over suture of wounds of the stomach or intestines, as well as for covering large stumps after the operations of hysterectomy or ovariotomies. This, however, is seldom necessary as the omentum usually has been found to have itself become adherent to a greater or lesser extent over the surface at the seat of the operation. Senn, carrying out this act of Nature, suggested that omental flaps be primarily employed. A like use of this viscus is found in its preventing the protrusion of such viscera as the small intestines in cases of penetrating wounds of the abdomen; this either occurs by the omentum itself protruding and thus preventing the intestines from becoming herniated, or where the omentum is thick like results take place by its action as a patch sufficiently strong to prevent protrusion of the viscera from behind it. It may serve in the same way in restraining hæmorrhages. Guthrie records a case in which the hæmorrhage from a wound of the deep epigastric artery was arrested. There are, however, numerous instances where this viscus shows no signs of protecting inflamed areas by adhesions. There is no protective sending out or wandering of portions of the omentum toward areas of injury or inflammation (chemotaxis) in those instances where the exudate is serous rather than leucocytic and fibrinous, where the former fluid alone is present, no adhesions can take place even though the epiploon is lying over areas of injury or inflammation.

Pathology:—The great omentum, in common with other parts of the peritonæum, may be the seat of primary or secondary disease even before birth. Thus, epiploitis may be due to the exposure of the pregnant woman to cold or wet, but more often occurs when she is a subject of specific disease. As a result of this prenatal inflammation, adhesions within the abdomen occur, and are at times the seat of internal strangulation or adhesions within a congenital hernial sac, especially in the umbilical regions. Wrisburg cites an interesting example of such an adhesion occurring in a child born at the beginning of the eighth month. The left testicle was arrested just without the external ring. Post mortem examination, four days after birth of the child, showed the great omentum had been drawn down into the left iliac region and united by three threads of adhesion to the tunica albuginea of the left testicle. This pathological condition may be

responsible for many of the cases of incomplete descent of the testicle, and congenital diaphragmatic hernia has been found with the omentum passing through them.

Splanchnoptosis:—This is due either to pushing or turning downward of the organs by a relaxation of the abdominal walls, or a general muscular atony may be the passive cause. It occurs in females in a proportion of six to one. Adhesions of the omentum to some of the organs or viscera in the basin of the pelvis, and usually on the left side are responsible for the majority of these visceral displacements. This is emphasized by the pathological finding at operation, as almost every case will give a history of previous attacks of peritonitis, and the evidence of this disease will be still further shown in the organized adhesions that are necessary to be dealt with at the time of the operation.

Injuries to the great omentum:—Injuries of this viscus are liable to be attended with shock even when no loss of blood occurs. This is probably due to the large supply of lymphatics and nerves and to the proximity of the solar plexus. They may be caused by external violence applied to the abdominal walls, or to a hernial sac. Laceration of the omentum has caused part of it to have its blood supply cut off with the result that gangrene has supervened. When this viscus is in a hernial sac, it is liable to be bruised or torn when taxis is roughly or improperly applied, and sloughing has been known to occur after the viscus was returned within the abdominal cavity. Such foreign bodies as a bullet has become encysted, and in another recorded case, a needle two and one half inches long has been lodged in the omentum for a long period.

Displacements of the great omentum:—The commonest site for traumatic hernia of the omentum is around the umbilicus, and the relation of this viscus to traumatic hernia is one of apparent rivalry, as it seems to vie with the rest of the abdominal viscera as to the privilege of being contained in a hernial sac, since it is a sole occupant in about one third of all cases of abdominal hernia. An umbilical protrusion on the whole most constantly contains the omentum, next the left inguinal, after this the left femoral. Its greater frequency of occurrence on the left side is accounted for by its development. The omentum, hanging lower on the left than on the right side, is much more likely to be present in old hernias of old people, but may be found in recent hernias of young subjects and even in children and infants. Epiploceles are often quite small in size, never reaching to enormous protrusions as seen in enteroceles or enteroepiploceles. Among the diseases of the great omentum, adhesions are very common, because of the existence of peritonitis, which adheres it to inflamed organs or viscera, such as ovaries, uterus, etc., which are often drawn up out of the pelvis, but more often the omentum is drawn down into the pelvis by the disease. Epiploitis or inflammation of the omentum is commonly part of a general peritonitis, and if chronic, is tuberculous in origin. Any time after an operation in which the omentum is involved an inflammatory tumor may form, often the nucleus of which is a ligature. This may occur without any adhesions of the omentum to the parietal walls, viscera or other organs. Tumors of the omentum may be either cystic or solid. The cystic tumors are:—1. Serous, which are generally the outcome of peritonitis. Other cystic tumors belong to that type described as lymphangiectasis, vesicular degeneration, or lymphangioma. It is probable that this form of cystoma represents the largest percentage of cysts found in this viscus. As structurely, their histological characteristics seem to be properly adapted to omental structures. 2. Hydatid. These are usually multiple and often detached hepatic growths, are frequently calcified, and are generally diagnosticated as ovarian tumors. 3. Chylous. These are dilated lymphatics or chyle channels. 4. Dermoid cysts. According to the most painstaking observers, these tumors are originally ovarian, which become detached after adhesions to the omentum. 5. Hæmorrhagic. Blood may be found in the lesser sac of the peritonæum or in the substance of the great omentum. The causes of these extravasations or apoplexies are traumatism, hæmorrhages into pancreatic cysts, rupture of the gastroepiploic vein, especially in portal obstruction, from pressure of a fibroid tumor of the uterus, in cases of varicoceles of the spermatic cord in the male, and from acute gangrenous pancreatitis when the lesser sac is distended with blood, besides the symptoms of internal hæmorrhage, a tumor can easily be palpated or mapped out by percussion, it will reach down below the umbilicus, more pronounced on the left than on the right side. 6. Abscesses. They are the result of perforating gastric or intestinal ulcers, with subsequent localized peritonitis or a hæmatoma may suppurate, and simple cysts may become gangrenous through cutting off the blood supply.

Solid tumors of the omentum are benign and malignant.

Benign; 1, lipoma, which is commonest; 2, fibroma; 3, myxoma. A lipoma rarely grows to a large size, though in one case recorded by Dr. Meredith it weighed fifteen and one half pounds.

Malignant; 1, carcinoma, endothelioma, scirrhus, colloid; 2, sarcoma.

According to Cornil and Ranvier primary carcinoma of the peritonæum commences either as colloid cysts of the omentum or encephaloid. Sarcoma: This latter is by far the more common of the malignant forms of tumors and it is usually of the spindle celled variety. Usually secondary and often multiple nodules exist. In one case of operation by the writer for bilateral ovarian sarcoma, the great omentum was entirely taken up in multiple sarcomatous nodules, comparing in size from a marble to a clinched fist with no vestige of healthy tissue remaining. Any of these malignant growths may be primary or secondary, except the so called endothelioma. It is, however, generally believed that the majority of them are of secondary origin. Endothelioma, however, is said to be always primary with early tendency to metastasis in the liver, lungs, and pancreas.

Fat necrosis of the omentum:—These conditions seem always to have been associated with and probably depending upon gangrenous pancreatitis, or glandular carcinoma with secondary deposits in the

aortic glands, liver, lungs, or suprarenals. The symptoms resemble those of intestinal obstruction, with intense abdominal pain. Where such a condition is found when the abdomen is opened, the pancreas should be at once suspected as the cause. The disease consists essentially in the breaking up of the omental fat into glycerin and fatty acids, the necrotic areas are of a chalky color and denser than normal fat. It may occur in adipose tissue elsewhere, but usually is within the abdominal cavity, and is thought to be brought about by an infection with the *Bacillus coli communis*, and also by a fungus present in the necrotic foci which resembles the actinomyces. Dr. Rollinson has suggested that it may be due to some lesion of the solar plexus, secondary to hepatic disease. The condition is a rare one, but when it exists the great omentum is usually the situation where it is most apparent.

Torsion of the great omentum:—Fifty-five of such cases have been recorded since 1882. 1. This may occur within the abdomen. 2. Within a hernial sac. 3. Combined hernial and abdominal; in the latter instance, the torsion is not limited to the hernial sac, but extends into the abdomen. This furnishes by far the greater number of cases. This accident has been recorded by Cullen as occurring in an accessory omentum, and was caused by violent whirling around of the patient, it was characterized by first a feeling of discomfort in the region of the stomach with pain over the appendix the following day, and was believed such to be until disproved by operation. A somewhat analogous tumor of the omentum recorded by G. G. Eitel was produced by the omentum being rolled upon itself, inward and upward, causing constriction and partial obstruction to circulation. It may occur in middle life, about twice as frequent in males as in females, and with the exception of a purely abdominal instance, a hernia is always present. The most constant symptoms are infrequent vomiting, bowels may be opened; the subject is usually a man of middle age with a hernia of some years' standing recently becoming troublesome, sometimes acute intestinal obstruction, more or less tenderness or actual pain on palpation. The mass is irreducible, incarcerated, or strangulated. Syphilis of this viscus, as represented by gumma, should be suspected if in a subject there is a history of a primary lesion years before, and the abdomen becomes distended with fluid, which on withdrawal shows the presence of sage granules, and carcinoma and tuberculosis can be excluded by complete recovery after the internal administration of antispecific treatment.

Symptoms:—There are no conclusive signs of either tumors or adhesions of the omentum other than a probable movable mass in the former instance, or pain on traction in the latter. Tumors or adhesions at the seat of an operation scar are extremely sensitive. The former are usually freely movable, while in the latter where traction is made which draws the viscera away from the point of attachment intense pain is usually produced. A tumor often suddenly appears, which, unless adherent, is freely movable in the abdomen and is usually found centrally located and in front of the intestines; it can be moved upward more readily than downward because of the omental attachment, they are somewhat influenced by respiration, unless adherent well down in the pelvis. There is usually some gastric symptoms, loss of weight, diarrhœa, alternating with constipation, and vague though constant abdominal pain and tenderness; and usually some time in the course of the condition ascites is present in greater or less quantities. Inequality of the two sides, if in a male, might be significant, scarcely so if in the redundant abdominal wall as found in females. Symptoms produced by traumatic umbilical hernia may be very few or even not at all. Vomiting with pain is probably most commonly present and especially so if there is any dragging on the stomach. When this viscus is the sole occupant of a hernial sac, it is usually recognizable as being soft and of doughy consistence, compressible with an uneven surface, often even nodular. There is seldom any tension or elasticity about the lump. It is usually elongated and pyriform, but rarely rounded, on reduction it passes into the abdominal cavity more gradually than intestines and without a gurgle. The omentum may become cystic, and in rare cases it may undergo calcification within the sac, or sarcoma carcinoma or tuberculosis may develop while it is incarcerated.

Treatment:—With the single exception of the colloid form of carcinoma, which is so rapid in its destructive course that it is practically from the onset inoperable, treatment, which should be limited to surgery, is entirely satisfactory. Sarcoma, which according to Gross holds a local or innocent period, should, if recognized and operated early, be cured, when inoperable, the serum treatment together with the x rays should be tried, as encouraging results have followed their employment. The frequent association of hepatic cirrhosis, fatty degeneration of the liver and biliary calculi should be kept constantly in mind as calling for treatment additional to that of the omentum. Many cases of peritoneal dropsy associated with malignant disease and tuberculosis, and even in heart disease completely disappear following simple section and drainage for a few days. The risk of possible gangrene ensuing after dividing the bloodvessels of the mesentery should be kept constantly in mind in operations for resection of the bowels, or separating adhesions in other abdominal operations.

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DUODENAL REGURGITATION DUE TO FATTY FOODS AND OILS AS A CLINICAL ENTITY. FAT INTOLERANCE OF GASTRIC ORIGIN.

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Of late years the employment of oils and fatty foods in the local treatment of gastric disorders has received considerable attention. This was mostly due to the experiments of Cowie and Munson on human beings and the view of Pawlow based upon experiments in animals, all agreeing that the influence of oils and fats decreases gastric acidity. To the practical value of these observations, which are important because the excessive acidities and oversecretions make up a bulk of gastric cases that are benefited by their use, may be added certain other facts which have helped to bring their universal adoption about. Among the most prominent of these are the following: In many of the neurotic and even those of a catarrhal condition of the stomach well digested oil is a powerful reconstructor, energizer, and tissue sparer, and by its constitutional effects assists in bringing about a more normal condition of the general body and stomach; the inhibitory action that it has in instances of overmotility and its antispasmodic effects in pylorospasm, also two common forms of stomach disturbance; and the writings of Cohnheim on the benefits that accrue from its use in the treatment of gastric ulcer, and several others of an empirical nature.

Up to this time the cases in which the use of the fatty foods or oils were counterindicated have been generally classed as those of fat intolerance, and this is represented in poor fat digestion and absorption, and the metabolic type of difficulty to assimilate fats after absorption. Leaving out of consideration such other conditions in which the use of fat would not be advisable (icterus, pancreatic disease, structural disease of the intestinal wall, some cases of diabetes and phthisis) I desire to draw attention to a stomach condition in which clinically the oils or fat foods, such as olive oil, milk cream, butter, and eggs, seem to be indicated, but in which they do harm and perpetuate the condition.

During the past winter I have seen four individuals, all men of middle age, who were definite instances of this, each of whom had been in the hands of competent practitioners without benefit, and each of whom made substantial recovery when the fats had been stopped and they were placed on a fat free diet (skimmed milk, white of eggs, carbohydrates, green vegetables, boiled meats, etc.). The additional reason I wish to draw attention to this is because it has been and will rightfully remain logical to believe that for any stomach condition of a neurotic or functional nature the simple and normal diet of good fresh milk and cream, fresh unsalted butter, soft eggs, and the readily assimilated forms of oil would be wholesome and safe foods to employ, and yet there is a class of cases, small in proportion, in which their employment is a most unwise practice.

Each of my cases occurred in individuals who gave a history of having had no stomach disorder up to the onset of acute symptoms. The subjective symptoms described were those of a sharp pain in the epigastrium radiating to the back which persisted for from several minutes to several hours and sometimes over one or two days at a time. In each instance these pains were described as most severe, irregular in duration, quite incapacitating the patient for the time being, and then suddenly ceasing at which the individual was as well as ever. There was no distinction in any of them as to when this spasmodic pain would begin or cease, and it was independent of meals or the ingestion of foods of different character or quantities. One of them said that a nausea was present at the time that the pain was severe, but none had vomiting at any time during the illness. Other than the seizures of pain, which came on acutely in the first attack, there was nothing particular in the history of any of them. Their average age was thirty-seven; the average length of time when the histories were taken that the condition had existed was two and a half months; two were in men who may be classed as manual workers and the other two were engaged in office work in responsible positions. One was habitually constipated, the other three not so. All were free from mental strain, worry, anxiety, etc., and all lived regular lives with good eating habits.

The physical examination of each was negative in so far as the abdominal and chest organs were concerned. They were well nourished, and but one had good muscular development. On several occasions I examined them when the gastric pains were severe and no tender areas, definite locality

of painful tenderness, spasm of the recti, or other symptoms were noted. Each placed my hand on the region between the ensiform and the umbilicus as the seat of the pain but in none did deep pressure on this area cause any particular distress. There were no reflex tender areas, back or front. Each was placed on a three days' diet for testing the digestive power for all types of foods and in each the stool examination was negative. The urines were also examined and were negative excepting the individual who had been constipated, in whose urine an excess of indican was noted; in this same person the blood count showed 4,200,000 erythrocytes; hæmoglobin, seventy-nine per cent.; and the morphology of the red cells and the differential count of the leucocytes were negative.

Three of the patients came under observation in one week's time, and in these I made the initial diagnoses of neurotic pylorospasm, pylorospasm with probable excessive acidity and general neurosis, and pylorospasm with moderate general debility and dietetic and occupation constipation. The patients were first given a thorough purging and were placed on a diet composed of milk, fresh cream, well cooked cereals, butter, and soft eggs, the daily amounts of food arranged according to the weight and work of the individual and representing between 3,000 and 3,750 calories a day. Olive or sweet almond oil was advised to be taken before partaking of food in the hope of relieving the pains which I ascribed to pylorospasm, and a bromide and valerian mixture to two, and the same with organic iron added thereto and a night dose of cascara to the constipated and anæmic patient. In a few days I appreciated that the most unsatisfactory of the cases in which benefit from treatment seemed reasonable to expect that I then had under observation were these three, and then I noted the similarity in the symptomatology between them and became cognizant of the fact that changes in their prescriptions seemed to bring about no beneficial results. They were on simple diets which according to the diagnoses should benefit them, and it was only when the bromides were given in large sized doses that this was reported, and such was only moderate and in principle not in accord with rational medicine, and to employ opiates would have been still worse. Evidently my diagnoses were wrong or my results of therapy were no better than others had received.

It was at this juncture that the first clue to the condition came from the first test meal extracted, which, after an Ewald meal, displayed a 900 c.c. return of almost clear bile stained fluid with considerable floating fat, a rather pronounced rancid fat odor, a small amount of starch constituent, a free hydrochloric acid of 12°, and combined hydrochloric acid of 13°, and a total acidity of 33°, and a few rolls of mucus. The meal having been extracted in the early morning before food had been taken it was evident that the fat was from foods which had been ingested the day before, although no evidences of other delayed or stagnant foods could be noted even on microscopical examination, and from the large amount of return even with the presence of bile I first believed the case to be one of gastrosuccorrhœa. On the same morning the third patient came in doubled over with pain and begged for something to relieve him. It was fifteen hours since he had taken food or drink and, anxious to learn if his was also a case of excessive secretion, I passed a stomach tube into his stomach and to my surprise aspirated therefrom instead of an acid gastric juice 43 c.c. of thick, alkaline fluid consisting mostly of bile and pancreatic secretion, about 4 c.c. of floating fat and marked amounts of fatty acid crystals in the fluid, some large clumps of mucus, but no food particles. After this aspiration, as with the patient who had had a test meal removed just before him, instant relief was alleged.

Continuing the diet, I aspirated the stomach of each of these patients after an Ewald meal, the empty stomach more than five hours after any food or oil had been taken, and each of them during a paroxysm of pain and during the interval. With the test meals, varying amounts of return were noted, but in each there was a marked increase in the amount of return suggestive of oversecretion. The acidities in each of the four cases varied, not too high in so far as the amounts of acids in 10 c.c. lots were concerned, but when considered in the total amount of acid represented in the large return an oversecretion was evident (this, in my opinion, was due to the irritation of the gastric glandularis from the bile present during gastric digestion). Each of the test meals displayed much larger amounts of bile and pancreatic secretions than can be noted in those rather common instances of duodenal contents admixed with test meals, and which are usually of no definite significance and probably due to the straining incident to the passage of the tube. They all showed a rather low mucus content and no abnormal findings excepting the floating fat from foods that had been taken hours before. Aspiration of the empty stomach in all displayed large collections of neutral or faintly alkaline duodenal secretions which were deeply bile stained and high in pancreatic ferments, and from 1 to 5 c.c. of floating fat. Considerably more mucus than was found in the test meals was also noted, the return being quite viscid. During the paroxysm the stomach contained this regurgitation from the duodenum and fats in marked amounts, while in the interval decidedly less collection was obtained, and in one instance none at all on aspiration of the stomach, but after instilling water into the organ through the tube a bile stained return containing also fat and pancreatic enzymes was obtained.

In the production of this condition it is important to recall that Pawlow in his experiments upon dogs with gastric fistula was able to obtain an emulsion which contained bile and pancreatic juice one or two hours after the ingestion of oil. Volhard, following Boldyreff, noted that in the human stomach positive results in the way of obtaining a regurgitated fluid containing trypsin following the taking of an oil could be obtained in sixty per cent. of cases. Upon these observations the Levinsky method and finally the Koziczkowsky method of obtaining specimens of the duodenal secretions from the stomach following the instillations of fats were based, and I may parenthetically state that the latter two methods are decidedly to be preferred in practical medicine for obtaining specimens of duo-

denal secretions than the two recently advanced mechanical means.

It is therefore plain, since these patients rapidly recovered when a fat free diet was installed without any other forms of treatment, that the fat of foods was responsible for the condition in the first instance, and these continued in the diet I advised and the oils accounted for the perpetuation of the duodenal regurgitation afterward. Certainly when these foods were stopped the condition ceased in a week's time in each case, and the duodenal regurgitation also stopped.

As to how the fats or oils in the stomach bring this condition about is not known, although it is probable that the normal pyloric reflex is interfered with either by there being a diminished secretion of hydrochloric acid which, according to Cannon, activates it by stimulation of the duodenal mucosa, or, as seems more probable, by the oils in some way affecting the mucosa of the pyloric region or the duodenum and causing pyloric relaxation or regurgitation in that way. The pain in each instance was due to the collecting of duodenal juice in the stomach and to the formation of fatty acids by its effect upon the fats which hung back in the organ. This could be proved not only by the presence of this collection in the stomach at the time the paroxysm was on, but also by the immediate cessation of pain when the stomach contents were ejected or washed out, and finally by their complete cessation when the duodenal regurgitation was not further stimulated by a fatty diet or the oils.

I feel that the condition is a clinical entity which should be recognized.

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HEREDITY.

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Introduction. Heredity has always been an attractive subject to investigators and, in relation to social life, of great import. In the last decade, work along this line has placed the subject in more concrete form, and mystery and fancy are being replaced by facts. Heredity is fast stripped of many features, and past fallacies are brought to light. This fact is important, both to the medical fraternity and to the public. Very important social questions that have in the past had substantiation because of a misunderstanding relative to heredity, must necessarily now demand attention.

An endeavor to deal with heredity in accord with present knowledge will here be attempted.

Evolution. With the beginning of life heredity may be said to have begun, and to go behind the scenes, so to speak, will greatly enhance the comprehension of this subject.

Opinions regarding heredity are very apt to be formed from expressions of life as observed in the present, without due regard to facts of early occurrence, and of great importance in life. Possibly this is the reason why such a loose custom in corelating life and heredity has obtained.

Evolution has given deep insight into this subject some features of which will be considered. Such study firmly impresses the fact that individual demands in the expression of life were satisfied. When environment made necessary certain features, those features were obtained. A good example of this may be observed in familiar plants (1). An axis destined to grow in the light and air, will, when bent over but not severed from the plant, and covered with soil, entirely change its features and become a root, and will give rise to another new plant. When this change is quite evident, the axis may be again replaced in the air and light, and be observed to assume the original form once more. (Tomato.) An axis of a plant may be severed from the parent, its proximal end placed in favorable soil, and there grow and form a new plant, perfect in all details. (Geranium.) Cells from the leaves of some plants will, when placed in suitable soil, develop a new plant. (Begonia.)

In this instance environment has completely changed the anatomy of one part (tomato) and produced in all entirely new features of life, and further, a new life, without fertilization. From these experiments, it would appear that either all cells in the plant are endowed with germinal protoplasm, which remains dormant or active, according to environment, or a new feature has entered into the life history, which environment, as light, heat, chemical and physical processes spontaneously developed, demonstrating ability to respond to environment.

A somewhat similar process is observed in lower animals, e. g. the appearance of a new part replacing a part lost by accident. The crustacea exhibit these features, as can be observed in the lobster (2) which regains a new claw if a claw is lost.

The musculature and alimentary tracts in animals exhibit interesting factors in this line of study. In these cases not only evolutionary progression, but the important process of reversion is encountered. In this regard the interposition of the pectoral group of muscles, as the fore limb became more used and useful is noted. Here the earlier scalene group, a continuous muscle sheet, was separated as the pectoral group was built up, and the old anatomy not only changed but a new acquisition also effected. The supracostalis appearing in man, as occasionally occurs, is a reversion back to the once continuous scalene sheet, and as other reversions seem proof of a time when form was different. The appearance of the dorsoepitrochlearis is another example of reversion. This is a very useful muscle in the lower form of monkeys (3). There are many reversions found in man's musculature.

On the other hand the plantaris and palmaris longus and brevis, though normal muscles in man, are of varying size and often absent, and present good examples of muscles disappearing from man's anatomy, in the evolutionary progression. These may be said to be in the transitional stage of progression.

The adaptation of the intestinal tract to needs is a striking example of acquisition and elimination. The short gut of the sand shark has its absorptive surface greatly increased by the spiral arrangement of the muscular tunic. Studies relative to the cæcum (4) are most interesting. In the herbivora the cæcum is an organ for the elaboration of food

products, and is of large size, e. g. the rabbit. As the cæcum is traced up in animal life a shortening is noted—and a marked diminution in the distal portion observed—till the distal portion no longer functionates, and is altered in the fine anatomy. In man this remnant is found as the appendix, and is entirely absent in some subjects (5). This is a very fair example of the elimination process of parts not functionally active.

Another feature in regard to anatomical (6) considerations is the appearance from time to time of individuals with a completely turned about condition of parts, e. g. transposition of the viscera, the lack of rotation of the intestinal tract, the left sided caval system of veins. Here may also be mentioned such anomalies as club foot—nondevelopment of extremities—and failure in closure of embryonal clefts.

The adaptation as evidenced in transplantation of one tissue to another where the transplanted tissue completely changes over into a type on which it is placed (A) is striking.

From the foregoing what deductions can be made, and what connection between heredity and these facts be established?

In regard to the plant (B) a new life comes forth *without fertilization*. This is an example of environmental change, suddenly in a living plant, and heredity would appear as maintaining those features whereby species is determined.

In regard to man facts as reversions on the one hand, and anatomical changes on the other hand are explained in part by physical force, in part by failure in development—conclusively by adaptability. Reversions strongly sustain evolution and the histogenesis brought about by environment (7). Physical force explains club feet—the rotation of the alimentary tract—and the transposed caval system.

The cæcum and appendix are beautiful examples of functional inactivity as the cause of elimination in the progression.

Different and striking facts are obtained in this relation in regard to the bee and ant (8). These insects are apparently able to hatch out as is desired a king or queen—and more, change the type of an individual already fixed in life as e. g. the converting of the winged warrior into a worker (8). This is quite at variance with the generally construed idea of heredity. Such occurs because of special nurture, as proved by actual experiment.

It would seem that up to this period heredity had but little foothold, and was responsible for the fact that the offspring maintained "those characteristics by which specie was determined," once fixity had obtained, and it must be recalled that fixity is necessarily somewhat arbitrary.

There is one factor in embryology that seems not to have engendered the application of heredity to circumstance. Chance is given credit for something, in the end result. Is the male or female so by individual inheritance? The Wolffian body and Müllerian duct must take precedent one over the other to the development of the one and the elimination of the other in order to produce a male or female. Such is not heredity—characteristics of, but not life itself are inherited. The beating of the heart—the circulation of the blood—and the metabolic changes of the body are hardly in the present use of the word inherited. Thermodynamics explains this (9).

Embryology conclusively proves that whatever is inherited must be contained in the chromosones formed by the fusion of the male and female element. Anything else is acquired—not truly hereditary. This is absolute in man; exceptional in low forms, possibly in silk worm disease, where the cells later to be the ova after the second year of life have arrived at full development. In the male the cells from which the spermatozoa will be formed are present and distinguished in early embryonal life (10).

The individual develops from the union of the male and female element, and becomes a living thing "like unto its parents" when the parents are a fixed specie. In no way can the progeny of the hybrid be determined until fixity has occurred, but if there is any progeny from such, typical reversion will be seen on the one hand, wherein a previous ancestor of the parent is reproduced, or a new (C) and heretofore unknown progeny be obtained on the other hand. The possibilities of inheritance in these instances seem to be limited except that a life has sprung up. Experiments in the vegetable kingdom prove this assertion (11), as does the Mendelian law, but this is not applicable to man so widely.

When fertilization of the ovum occurs, a new and distinct life begins—and anything happening that affects such life thereafter is acquired. Life (12) then will be divided into the following phases, 1, antenatal life; and, 2, postnatal life.

Antenatal life will again be divided in the following three phases: 1. Segmentation period; from the moment of fertilization up to the time when a distinction into the layers of the blastodermic vesicle occurs. 2. Embryonal period; from the time of distinction in the blastodermic vesicle to the fully formed fœtus. 3. Fœtal; from the time the fœtus is fully formed up to its birth.

Postnatal life is the life after birth.

In the lower forms of plant and animal life the expressions of such lives will be said to be physical. Existence is maintained by chemical action, including thereby all processes of repair and waste—osmosis—catalysis—heat—light—and interchange of gases, by which growth and development are brought about, and in which the power of reproduction is recognized.

However, as the approach to higher order of life is made, complexity manifests itself, not because of the physical upbuilding, for here the same fundamental principles underlie life's expressions, but due to the fact that a highly complex and specialized tissue is encountered, called the nervous system.

Wherever this nervous system is encountered it appears to be the part governing the various functions by which life is maintained—and exerts a control over and has ability to coordinate one with another.

It is the centre from which emanates impulses and translates impressions. Still further up in the scale complexity upon complexity is built upon the nervous system (13), till in man the most highly endowed mind is encountered, by which man transcends all other life.

Again in order to study heredity not only the healthy, normal individual, but also the abnormal individual must be considered. Here then is the subject, influence of heredity upon disease, or, better, the influence of diseased or abnormal parents upon the progeny.

Having thus systematized the work it appears that the phases of life and heredity were in a position to be associated or disassociated, according to data at hand.

Up to this point in the discussion it has been pointed out that heredity has maintained the species characteristics. It has been observed that acquisition of parts due to the necessity of environmental influences occurred, and the loss of parts due to functional inactivity lead to the process of elimination, and then various force, e. g. chemical, physical, and thermodynamics give the reason for other factors whereby the axial planes of veins—rotation or not of the alimentary tract and sex obtain.

In considering what may and what may not be inherited our interpretation will be enhanced by starting with life collectively and rapidly coming down to man, about which centres important facts that interest mankind.

In general, then, those characteristics by which species is determined are hereditary, each species having a physical form, and that form is evidenced in shape, size, color.

Physical form. Artificial changes in physical form in the parents cannot be made to appear in the progeny, hence mutilations are never inherited. The loss of leg or arm in parent has no result in the offspring. Weismann's (14) experiments, and those of others following along Weismann's line seem to prove this conclusively. Two recorded experiments by Brown-Séquard (15) must here be noted, but chance no doubt has the important rôle; and never has mutilation in parent been observed before or since in the offspring, though efforts to obtain such results have been untiring.

The Lamarckian theory (16), based upon transmission of characters acquired, here has a powerful line of work in contradiction to it.

Color. Cross fertilization in plants gives most varied results. Color cannot be preordained by the experimentor. In animals the same holds true, as evidenced in the breeding of dogs. The union of the different colored races is uncertain in this regard.

Darwin produced from the union of two distinct colored pigeons the original blue colored offspring, found in the original blue rock pigeon (17). Ewart also obtained the same result with different parents.

The Andalusian blue fowl, a cross between a black and a pure white strain, breed true to only fifty per cent. The rest are recessant; either all black or white with black splashes. By applying Mendel's law, however, and breeding these recessors it is found that one hundred percent. of the blue fowl obtains.

Startling results are expected to be produced by the application of Mendel's law (18) in those cases in which much crossing occurred in the past history of the individuals.

Size. Uncertainty in regard to size leaves open whether or not size of any given individual is inherited. In plants (C), by crossing, all varieties in size are obtained. In animals the same holds good, often tall individuals come of short parents, and vice versa. It is easy to satisfy one's self of this by tracing back several generations. Here could it be said of heredity more than that a given specie has an average size from which individuals vary. This is an excess of development in the progeny over what exists in the parent, if the progeny is larger. The converse is also true. No doubt those imbued with heredity might find somewhere in the family tree an ancestor upon which their theory could be hung. It appears that nature seeks to produce an average.

Having thus generally dealt with physical form, a more definite relation of heredity in regard to life will be undertaken.

Race. The various races differ one from another in many ways, explained by heredity, or the sudden development of so called sports (D), continuing as a fixed type. Heredity maintains the characteristic features. The color of races are examples of this, immunity or susceptibility is a very interesting and striking example. In animals of the same kind, some are entirely nonsusceptible to what others are, e. g., cattle (19) of Japan are not susceptible to tuberculosis, and the sheep in Algiers are not susceptible to anthrax. In man, the negro is very susceptible to tuberculosis.

Man. In regard to anatomical features judged by what is understood as normal. There are many instances of progeny having the physical abnormalities of the parent, as webbed fingers, or longer or shorter phalanges. The thumb in its conformity to other phalanges and the hand shows striking persistency to continue its family likeness throughout many generations of one family. It is noticeable that this is a recent acquisition (20).

Susceptibility. Some are more susceptible to certain disease than others.

Defects. Defective development as hæmophilia (21), color blindness (22), and so called diathesis are no doubt due to defect or weakness. The most important inheritances of defects from the sociological standpoint are those defects of the nervous system (E), of which two types are recognized, viz., defects in the progeny identical to the parent defect—as Thomsen's disease or Friedreich's disease, both very rare, and not strictly diseases, but manifestations of a defect in the brain or cord; and defects in the progeny not identical to the parent defect—but expressed otherwise in nervous phenomena.

In the first classed mental defects—it will be noted that the portion of the cerebrum which will have to do with mind in the future is not involved. In the second classed mental defects the evidence of the defect is not disease, but seems to be an imperfection, not in any particular area, but in the proper corelation of the higher centres. In this class are the insane, and the so called neurotics, and these defects will be *later* evidenced when some strain brought about by environment is applied. Just what the evidence of a nervous system below par will be cannot be stated.

A most important subject to men is to determine whether or no, and in what way or to what extent the mental force of the progeny can be influenced

by the mental impressions of the parent. There is no grounded reason for belief that the impressions of the parent ever produced result in form, size, or color upon the offspring. The old story of Jacob's acquisition of his flocks at Laban's expense can be of interest only as giving a clue to some one's imagination.

The worn out nonsense of the offspring bearing marks from mental impressions of the mother is too well understood as ridiculous to need further comment.

Power of impression in the parent or parents as modifying form, size, or color. Whatever happened as impression before the union of the ovum and sperm cell cannot be conceived as affecting either, nor is it any more possible to believe that after the union maternal or paternal impressions could in any way influence that offspring. Embryology (23) teaches us that in two weeks or so segmentation of the ovum has reached the stage where definite form of the embryo is about to occur, and in two months a fœtus is fully formed. Also the fœtus is not a part of the mother—it is within but not of her—it is in itself an individual—not possibly able to be mentally impressed by the parent. Numerous instances can be recalled where rape has been committed and pregnancy occurred—where the greatest of emotions were aroused in the mother while pregnant in varying stages—without any apparent effect upon the offspring physically or otherwise.

Right here may be mentioned telegony (24) as outlined by Darwin. It is not true that a bitch lined by an undesirable dog is spoiled for future breeding. With personal observation and the observation of others the statement that telegony is absolutely void of any truth is unhesitatingly made. There should be abundant proof of telegony in many animals, man included, if it were so. The marriage of a woman to a second or third husband —having had children by a first would give such proof—if the children of the second husband resembled the first husband.

In dogs to-day the highly bred types are the product of artificial breeding. The purest blooded setter or pointer, the progeny of which are demanded by man for purposes of business, recreation, and companionship are an example. They have been bred from dogs in the past showing this or that peculiar and desirable property, and are one of the best examples of artificial breeding wherein certain points were intensified. In other words it is upon physical laws alone that from the more perfect in physical form would be obtained more perfect form in progeny. It is the old law, like begets like. In thus breeding the dog is still a dog—varying peculiarities are added, but do not evolve a new species, nor has intelligence been increased. In fact it is not only most common to find the uncared for mongrel in the race of survival a better specimen than the artificially intensified species—but to find the artificially intensified individual often deplorably lacking in every desired qualification is most common.

Those of us who have had experience in these high class dogs have seen "sports" often develop; have found the progeny of most careful mating the disgrace to the name of dog; have discovered that a point can be reached wherein every law of like begets like and whatever could be laid to heredity will be completely overthrown, except that the same species obtained. The delicacy of the pups of the Boston bull is notorious; the uncontrollable, brain lacking bird dog often is produced from perfect parents. Much along this line could be stated of fowls. Artificial mating has done a great deal—has produced great egg machines, different colors and points—but here environment is changed as not allowing liberty—in other words in conserving energy, so that the fowl "hunts not for sustenance by its own powers," but rather has artificially prepared foods served to it by servants to its "feathered majesty." It has not inherited this egg laying proclivity—it is acquired—and can be accomplished in one generation in any fowl by these artificial means. Turn such birds back to nature and they will immediately fall off—not only their progeny—but they themselves. Here is work for investigators of physiological chemistry.

The brain as the centre of intellect. The intellect is located in the frontal lobes of the cerebrum. It is impressions stored up to be recalled. In animals that speak—thought can be expressed by sounds.

It is evident at once that as mind is acquired in postnatal life no mind effect could be inherited—that no mental impression in the parent could be conveyed to the offspring. The experiments of Brown-Séquard (25) relative to epilepsy, often used by the Lamarckians in substantiation of their theory, make no exception to the above.

The many expressions of mental life, then, must be solved on different grounds, and the reason for defective mentality is found in the fact that the brain, which is to assume this responsibility, is defective itself—not because of the mental expression in the individual, but because that individual had not the perfect organ in which mentality could be developed, and no thought in the parent can ever affect the mind of the progeny.

The brain is histogenic (26) in character—it develops as it is used—as evidenced by the fact that the individual can intensify brain ability, e. g., educating the eye—the sense of touch—or hearing. The acquisition of speech—of knowledge—is a potent example of brain upbuilding to demands made by the individual.

From the union of parents each possessing healthy normal nervous systems such is the progeny, just as of other parts of the anatomy would be expected. Yet this often fails to obtain. Heredity can contribute the organ itself, but when acquisition begins in that organ as the individual develops—environment must ever play a potent part upon it.

Until such time where careful study of brains after death, and of the life before death, and areas therein are demonstrated to be the receptacle for all acts and thoughts, and each area correlated arrives—this subject of heredity must be in this particular, absolutely hypothetical, with the facts above mentioned as limits to definite knowledge.

Investigations by many men of the brains of dead men from all walks of life have never shed light upon these lives, never explained or found answers to questions of vital import. In the healthy indi-

viduals so far as man has ever been able to demonstrate the brains of all men were the same.

The criminal has never had divulged by examination of his brain why he was a criminal—and the scholar never had divulged by examination of his brain why he was a scholar. Right here is one important social question to-day—one that is before us in this state at the present time, viz., the law (27) to prevent the procreation of the criminal by vasectomy or castration of the male. When a so called civilized community puts upon its statutes a law that is based upon so hypothetical and absolutely theoretical foundation as heredity, and then makes a still more illusive hypothesis by implying that crime, which is the result of a mind, which mind is a postnatal acquirement, is an inherited attribute—there certainly is a demand made that deserves greatest consideration. This whole subject of *Weltverbesserung* is an experiment, a case of doing away with our kind as judges. Who is to be the judge—and what is crime?

The experience of medical men teaches us that a great desire is among the present generation of newly married not to have children, and we better than any other know how frequently men and women resort to evil and pernicious practices in efforts to prevent conception. It puts man down to the lowest level of animal life in obedience to moral and natural laws. No doubt the criminal who thanked the physician in Indiana for performing vasectomy upon him meant every word of thanks. It appears, too, that if the public could be given some effectual receipt to prevent conception, a mighty "thanks" would also come forth. This is a terrible calamity, but we know the truth herein contained. Something is wrong—and no argument is here necessary to emphasize the fact. It is evident that from this fact alone great and endless work obtains in correction thereof, and the sociological conditions of today will have to be upheaved.

It is here pertinent to express some opinions in regard to prevention of procreation in the so called criminal. The first fact that confronts us is this—Are the offspring of the criminal criminals? It is very rare to find the father—son—mother—daughter within our prisons. Seldom but one of a family are convicted of crime. Actual facts tell us that careful records of children of criminals sent west from New York city proved them to be at maturity mentally and physically the equal of other children in those communities. When by the social life today the feeble minded—the insane—the criminals are produced, shall not the cure of such production be in removing the cause—not the product? I unhesitatingly state that if every feeble minded and insane and criminal person were removed by death, that the next generation would produce in proportion as many or more.[1]

The progenitors who are consuming alcoholic beverages, who are wearing down physical and mental powers in the race of life—who are by their *lust* depleting their sexual vigor (28) and nervous systems, who are in fact by their modes of life not only producing physical wear but courting and engendering disease, will because of their sins against nature be the parents of poor progeny—will develop a poor machine wherein its delicate mechanism, the brain, will be sure to receive some effect. A worn out brain or physical body—a generally weakened organism—is not the perfect progenitor. Everything upon this earth where men have been interested in its propagation they have chosen those individuals that approached the physical type of perfection. I want it understood that I do not say anything originating in the mind of man as thought or its expression in act will be given to the offspring—but I do say that an enfeebled individual will, in spite of Nature's endeavors to correct, at times produce an offspring which is below par. Proof of this will be given shortly.

The natural segregation of these poor unfortunates deprives them of environment which would affect them for good, and produces environment extremely bad (29).

Those interested in psychiatry (30) appreciate the importance of the present social conditions. Through their efforts if a normal index could be established in regard to the mental workings of man and the impressionability of the brain to the environment be ascertained, much good would accrue therefrom. If it could be established what the *index of appreciation,* as I call it, is, then no doubt ways would be found to engender proper appreciation in those falling below the normal index. It is in the case of individuals where the index of appreciation is below par, that the feeble minded, the sexual pervert, the useless citizen, and the criminal are found, and to one of normal index there is nothing more illogical—more beyond their understanding—than the acts of such. Crime is the most illogical act imaginable. If this thought is carried on further and to extreme degree the normal index of appreciation is lacking, then the insane confront us. At least ten per cent. of the criminal later become insane. Then would be three circles within themselves. The inner containing those of normal index of appreciation, the next those below par in this respect, and the outer the insane, and the pathways across the centre and outer circle numerous beyond our possibility of conception.

One at once perceives what a revolution correction calls forth, and man himself will be the one to prevent any such movement. Just for a moment try and imagine what it would mean if all the class in the midcircle were put to work to build, say a highway across this country—or were started in any task—thereby doing actual work—being paid reasonable compensation in money for their labor till

[1]The development of a "sport" is ever uncertain, and not only in the vegetable, but also in the various forms in the animal kingdom do "sports" occur without reason or apparent cause, so far as the mind of men can observe. These "sports" may or may not remain a fixed type and be the parent of its like (see note C). The appearance in a family of a red headed child where both parents are decided brunettes and no red head has been known in the direct family tree is an illustration. Albino children also illustrate how great can be the deviation from the parent or grandparent, etc.

When it is considered that the wrong living of parents, particularly the social life of indolent mothers, alcoholic consuming and sexually worn out fathers, also environment produced by an unworthy nurse maid, who ofttimes excites for her sexual gratification the male child (see Krafft-Ebing's works), here at least does both parental unfitness and environment tend to produce a poor specimen.

The development of a son or daughter into a most horrible degenerated monster from morally respectable parents must, it seems, be due to a lack of cerebral balance in the individual, which lack again must be due to a faulty environment, or faulty cerebral development, because of not heredity taint, but imperfect parentage, wherein the parent seed is impoverished by a mistake in life, or the anatomical construction of the brain faulty by purely physical reasons.

they, during their time of paying penalty for crime had not only relieved the State from expense of their keep, but had replaced to their victims dollar for dollar, or its equivalent, and then with sufficient money to keep them for a time till work was procured by them—go forth in pastures new. Such a revolution as would come about by the advancement of this step would stamp the history of the world. From constant press articles evidently no legislative body is free enough from the influence of monied interests to enact such law.[2]

Heredity in regard to disease—susceptibility—immunity—confining remarks to individual men. It has already been pointed out that defects and anomalies are inherited; that hæmophilia—Daltonism—Thomsen's disease so called—and manifestations as lack of coordination of the higher centres as found in the insane are inherited; that also web fingers are an example of anomalies inherited; that susceptibility to, or natural immunity from disease is also inherited.

There is no such thing as inherited diseases recognized as infectious disease, e. g., syphilis, tuberculosis, smallpox are not inherited. When the progeny manifest these it is probably only evidence of acquirement. Such acquirement or in other words—infection—may have occurred either in antenatal or postnatal life.

In antenatal life, the embryo can be infected by the parent. It is conclusively proved that the embryo can be infected by having infectious material as the semen of the syphilitic male—brought into contact with the membranes enclosing the embryo, or possibly by the mother's infected blood bathing the placental surface. The significant fact in the syphilitic still born prematurely, or the living infant at birth, that the greatest effect of the disease is seen in the liver, possibly the only effect evidenced. Fœtal circulation answers why?

If it is granted that sufficient number of bacteria were in the ovum and spermatozoa before fertilization—which would produce disease, (when it is near impossible to conceive that such could obtain) even then if the offspring showed the disease it would only mean that it was an infection *via* the parent cells in no way inherited.

It is known how many tubercle bacilli will cause peritoneal tuberculosis in a guineapig—eight will and seven will not. So the infection by bacteria can be reduced to mathematical exactness. The significance is obvious.

Susceptibility. Predisposition. Heredity can predispose to disease. Take tuberculosis as an example. However, environment must ever play a most important factor, and due regard paid to it in discussions of this kind. In the present light on this subject (it appears that tuberculosis is a disease which does not foster the combative powers of the individual. There is, on the other hand, quite marked tendency for one so infected to be constantly and steadily weakened. The effect of poisons upon the body are little known. Much is wanting regarding osmosis and chemistry, knowledge of colloids and dynamics. It is well within the facts, however, to ascribe to tuberculosis and other kindred diseases, the power to weaken the primary sex cell as it weakens the body, and to therefore produce susceptibility to diseases which are at work in the parent, the effect of which on the offspring will be as in that parent. Science is only on the threshold of the possibilities in this regard, and the body reactions to conditions and to poisons still obscure. Flexner's (31) recently discovered cause of infantile paralysis, an ultramicroscopical being capable of going through the Berkfeldt filter, is astounding.

It seems that the plane upon which we rise from the finite to the infinite is almost at hand; was almost reached when the chromatin bodies were investigated, will be reached when the study of molecules, colloids, and dynamics explain the cause of chromatin body relations.

It is perfectly reasonable, and born out by scientific knowledge, to say that a weakened, exhausted, enfeebled organism is a poor progenitor. Further, that the life of such individual can be by living so weakened, enhausted and enfeebled, also that such poisons as those of mineral or organic origin can be taken into the organism, as will accomplish these impoverished changes.

Facts to substantiate this are briefly mentioned. The poisoning of rabbits (32) by lead salts caused the progeny to be monsters. If lead can do this, so can alcohol, and about us how closely alcohol and depravity, alcohol and imbecility, alcohol and crime are related, only awaits any one's investigation to prove the fact. Disease in its causes, as those of the infections, are only other poisons, and like syphilis, for example, a potent poison, which so alters the parent cells as to produce a feeble offspring. It is deduced from laws of biology that genesis is an excess of nutrition and fertilization is a rejuvenescence.

It is getting so that when as physicians we see the neurotic child, the various tremors and evidences of an incoordination, epilepsy, the question arises how much is rum back of this, or fast life, and enfeebled sexual powers. That sexual excesses bear most powerfully upon the procreative function is absolutely proved.

The theories (33) of heredity can be but mentioned here. All are worthy of consideration and fruitful study as evidence to the depth of the minds of men. Some, such as Weismann's theory, may be reduced by mathematical processes into absurdity—others seem beyond the power of attack. Dalton's law and Mendel's law are most noteworthy. The Mendelian law is becoming stronger and stronger as work proceeds along that line. Erlich's side chain theory has an intermediate place, between the first mentioned and the probably most correct version of life and all that pertains thereto, namely, the physicochemical theory with thermodynamics, including catalysis, osmosis, and the peculiar colloids all now under close observation of men. The wonderful work of Gibbs (G) is the foundation upon which these new studies are based.

In general, it is concluded that heredity and life are closely related, and special characteristics, individual attributes, personal entities are inherited. That it is beyond the power of the human mind to contemplate, correlate, coordinate, the great and wonderful factors which have come down through

[2]In Connecticut the criminal is paying his way after incarceration under the régime of the present superintendent of the State Prison.

the ages, maintaining in certain forms, certain features, entirely lost in other forms, producing acquisitions and causing such elimination as was demanded, building up complexity upon complexity, till the remarkable complex organism of man is reached. From the time that the cooling waters upon the once molten mass of earth reached a point wherein by thermodynamic principles, the first life as a colloid material obtained up to now, the ages alone are like space, immeasurable—the step by step evolution beyond calculation.

It is conceded that what in environment or in individual life affects the whole being, must necessarily also affect the sex cells, and so therefrom will be handed down something to the progeny. So climate, as an example of environment, is mentioned. Poisons, as alcohol, lead and the toxines of disease, also produce effect. Finally enfeebled, weakened and exhausted parents from modes of living must in turn have the sex cells influenced. These are all definite entities producing this effect. In regard to crime, however, or any attribute of postnatal acquirement, such as the voluntary acts of a man in response to his mentality which do not cause physical weakness, would not produce effect upon the progeny, except by environment. It is not proved that those acquiring great technique from constant use, as the finer coordination required in skilled musicians, even hand down a higher developed member so acquired in their life, much less the technical ability. The contrast between "Jukes" (29) and "Edwards" are examples of personal defect and physical perfection, and of environment. Spencer's observations that the Irish immigrant gave birth to children in this country like American children is explained by environment.

Environment. Under the head of functionally acquired characteristics in regard to the inheritance of the same, Spencer dwells at some length, and many features apparently were encountered which at that time more than met the resources of Spencer and others. To-day, most profound respect must be given to these men, and had they possessed the knowledge at command in this era, the discrepancies of their application of facts to conditions would not exist.

The wonderful amount of work accomplished by biologists, embryologists, bacteriologists, and the physiological chemists now open up a new field wherein we are in a position to see what these men had to hypothecate, and the influence of environment can be more plainly observed upon life.

The absolute change that can be wrought in bacteria by environment, e. g., the anthrax bacillus—made to grow and thrive without spores—many pathogenic bacteria rendered harmless—and harmless bacteria made virulent, are facts in bacterial life. Then the experiments by which butterflies are grown without color—with many generations to develop before color is restored is significant—and all due to environment, and the side chains in the physicochemical theory answers for these changes satisfactorily.

Then in regard to the effect of poisons upon the body—as alcohol—and the bacteria toxines—great strides have been made. It is known by experiment and carefully deduced facts that alcohol is a poison not only upon the organism partaking it, but does so impoverish the germ cells as to influence the progeny, as does sexual excess or debauchery. Insanity and epilepsy are the nervous diseases which alcohol may engender. One low type rum soaked "Juke" was the ancestor of 1,200 "Jukes"—costing the state one and a quarter millions to keep them suppressed—and in charitable insitutions. And to-day there are many "Jukes" in society.

Environment has greatest effect upon all life; none can deny that. Often, however, environment and heredity are not logically connected. The original "Juke," let us admit, was below par in intellect, and took to rum. From then on he found many of his kind. Natural segregation makes intercourse between these people their only society, except the servitude of the charitable institutions and the prison. Again, let us be as lenient as possible and say that influence of environment does cause a stamp upon the somatic cells and also upon the sex cells, e. g., climate, and then further we will admit that such acquired functional characteristics are handed down, as the physical details of shape in the nose, head, color, for example. But after these concessions and there to grant also that a physically poor in brain or other parts of anatomy is a bad progenitor—and despite the heredity of the millions of years behind the new born and nature's endeavor to correct fault in each—still, we cannot say that crime is inherited.

We can only say that crime creates environment that will unquestionably stamp the offspring so surrounded, and such offspring as the later "Jukes" can be credited with begetting, could only in such environment be a "Juke."

Environment does not alone mean the surrounding habitat in home or abroad, but also must include those forces which exist to so produce such, and here we find alcohol with what it entails (as the destruction of the higher aspirations) ignorance—poverty and crime following to stamp the new born by the fearful environment produced, and from the weakened alcoholic—if a weakened child obtains, then it does seem to us that if left alone its life will be easy to forecast—and at maturity will be as its parents were. Conversely it is certainly conceivable that removed from this environment, and placed in such as would engender those things looked upon as best, that a very different story would obtain. But the public institutions are no place to secure the best for these; far from it. In contradistinction to the "Jukes"—if a "plus x" was placed in the environment of a "Juke," with a superior mind and body, it is not at all unlikely that at maturity there would be a "plus x Juke"—worse than plain "Juke" by far.

To-day it appears that the physician is in an envied sphere, where he must become a teacher and a guide in the lives of men. He, best of all, is the one, because of his intimate relations with many, to teach. All else has come and gone, religions and all works of men—but science has steadily progressed. As compared to science, everything else in actual usefulness is insignificant. Even religion to-day, as evidenced by the restlessness and uprising of creeds, speaks plainly of its infirm foundation. It is time that the physician, instead of allowing the encroachment of such fads and follies into his field,

awoke—realized his work and aided men to seek and find better life, better living. Heredity is theoretical—ever will be, no doubt—and so we leave it here—with respect to the past and hope for the future.

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7. The Embryonal mesh work that later is replaced by veins. The veins appear to have their axial planes produced by the increasing amount of fluid taking certain pathways.

See Schultze and Tilney in *Anatomical Record,* iii, No. 2, also Huntington and McClure, *American Journal of Anatomy* vi, No. 3, p. 33, 1907.

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8. *Riverside Natural History,* ii, Crustacea and Insects.

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W. I. Thomas, *Sex and Society,* Chicago, 1907.

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C. De Vries. New plant, *Œnothero gigas,* suddenly developed and produced its kind.

Also white horses from an English strain in which the original white horse was a "sport" and propagated its kind.

Silky sheep come under this head.

It is not improbable that spontaneous evolution occurred frequently.

11. Darwin. *Animals and Plants under Domestication.*

D. Spencer. *Synthetic Philosophy—Biology.*

12. Founded on His's plan, varies in first segmentation stage. (H. M. Lee.)

13. Johnson. *The Nervous System of Vertebrates,* 1906. Chap. xviii, on Evolution of the Cerebral Hemispheres.

14. Weismann. Cutting off tails of mice for many geneartions—never produced mice with altered tails.

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16. Lamarckian, theory, refers to the inheritance of acquired characteristics further developed by parent.

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E. Starr. *Organic Nervous System,* Chap. xxvii, p. 530.

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25. Brown-Séquard, relative to epilepsy, induced epilepsy in guineapigs by stimulating the sciatic nerve—in two instances epilepsy was present in the offspring.

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An act concerning operation for the prevention of procreation," providing for the appointment on the staff of all institutions in the state in which are confined criminals, idiots, rapists, and imbeciles, of two skilled surgeons of recognized ability who may, if deemed advisable after consultation, perform such operation as shall be deemed safest and best and most effective for the prevention of procreation.

Substitute Bill as passed—

Section 1. The directors of the State prison, and the superintendents of the State hospitals for the insane at Middletown and Norwich, are hereby authorized and directed to appoint for each of said institutions respectively two skilled surgeons, who, in conjunction with the physician or surgeon in charge at each of said institutions, shall constitute a board the duty of which shall be to examine such inmates of said institutions as are reported to them by the warden, superintendent, or the physician or surgeon in charge, to be persons by whom procreation would be inadvisable. Such board shall examine the physical and mental condition of such persons and their record and family history so far as can be ascertained, and if, in the judgment of a majority of said board, procreation by any such person would produce children with an inherited tendency to crime, insanity, feeble mindedness, idiocy, or imbecility, and that there is no probability that the condition of any such person so examined would improve to such an extent as to render procreation by any such person advisable, or if the physical or mental condition of any such person will be substantially improved thereby, then said board shall appoint one of its members to perform the operation of vasectomy or oophorectomy, as the case may be, upon such person. Such operation shall be performed in a safe and humane manner, and the board making such examination and the surgeon performing such operation shall receive from the state such compensation for services rendered as the warden of the state prison, or the superintendent of either of such hospitals, shall deem advisable.

Section 2. Except as authorized by this act, every person who shall perform, encourage, assist in or otherwise promote the performance of either of the operations described in section one of this act for the purpose of destroying the power to procreate the human species, or any person who shall knowingly permit either of such operations to be performed upon such person, unless the same shall be a medical necessity, shall be fined not more than one thousand dollars, or imprisonment in the state prison not more than five years, or both.

Indiana State Law to prevent procreation of Criminals:

A Bill for an Act, entitled an act to prevent procreation of confirmed criminals, idiots, imbeciles, and rapists; providing that superintendents and boards of managers of institutions where such persons are confined shall have the authority and are empowered to appoint a committee of experts, consisting of two physicians, to examine into the mental condition of such inmates.

Whereas, Heredity plays a most important part in the transmission of crime, idiocy and imbecility;

Therefore, Be it enacted by the General Assembly of the State of Indiana, that on and after the passage of this act it shall be compulsory for each and every institution in the State, entrusted with the care of confirmed criminals, idiots, rapists and imbeciles to appoint upon its staff, in addition to the regular institutional physician, two skilled surgeons of recognized ability, whose duty it shall be, in conjunction with the chief physician of the institution, to examine the mental and physical conditions of such inmates as are recommended by the institutional physician and board of managers. If, in the judgment of this committee of experts and the board of managers, procreation is inadvisable and there is no probability of improvement of the mental and physical condition of the inmate, it shall be lawful for the surgeons to perform such operation for the prevention of procreation as shall be decided safest and most effective. But this operation shall not be performed except in cases that have been pronounced unimprovable. Provided, that in no case shall the consultation fee be more than three dollars to each expert, to be paid out of the funds appropriated for the maintenance of such institution.

The State of Oregon has enacted a duplicate bill.

28. Fuller. *Disorders of the Male Sexual Organs*, 1895. Krafft-Ebing Particularly on Vasculitis. *Psychopathia sexualis.*

29. A. E. Winship. *Jukes-Edwards, A Study in Education and Heredity.* P. I. Myers and Company, Hamburg, 1900.

30. Paton. *Psychiatry.*

31. Flexner and Lewis. Experimental Epidermic Poliomyclitis in Monkeys. *Experimental Medicine*, March, 1910.

32. Adami. Poison by Heat and Alcohol. Osler's *Modern Medicine*, i, p. 44.

33. In regard to Darwin's theory of pangenesis: This was put out tentatively by Darwin, and goes without saying that to-day has no acceptance, mathematically a microcosm can be reduced to absurdity.

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THE SYPHILITIC AND TUBERCULOUS PATIENT.

By Gilliford B. Sweeney, M. D.,
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That these two, all too common, diseases may and do exist in the same subject concurrently is a fact which has been confirmed time and again by every observing clinician. That a commendable enthusiasm could lead an earnest worker to even attribute the two maladies to a common source calls for no harsh criticism.

Dr. Penrose's article in a recent issue of the *Medical Record* particularly impressed me, as his experience in the alternate use of succinimide of mercury and tuberculin has been strikingly confirmatory of my own observations. These observations have not led me ultimately up to the mountain of exaltation, I am bound to admit, but rather back to a very homely and trite proposition, which I may best express in the following manner: In mercury we find an absolute specific for one specific disease, syphilis. For its most formidable rival, tuberculosis, a specific must be sought among those agencies which directly stimulate the natural defensive powers of the blood.

In an article published some time ago, I took occasion to remark that "tuberculosis is essentially a disease dependent upon defective or impaired nutrition." The tubercle bacillus is in no sense an aggressive foe. In this respect it is strikingly different from syphilis, which attacks the vigorous and the debilitated with equal facility, and, leaping from generation to generation, selects its victims with audacious and unerring precision.

While in the service of Professor Gaucher, in the St. Louis Hospital, Paris, I was deeply impressed by the results obtained among the syphilitic patients through the use of a serum having for its active agent benzoate of mercury. These patients being largely pensioners upon the state present distinctly unfavorable conditions from a hygienic, nutritional, and moral standpoint. In the face of these facts, I found that they did well and showed rapid improvement. A surprisingly small dose of the benzoate of mercury yielded results such as we would only expect to get from a much larger amount of the drug. From one tenth to one eighth of a grain administered hypodermically daily not only showed prompt results in old third stage lesions, but in many instances, threatened ptyalism and swelling of the gums gave warning to reduce the dose and stimulate the secretory organs.

One objection only I found to the benzoate in this form, and this has likewise always been a bugbear when I have used the succinimide, viz., the pain experienced by the patient, as well as the more serious obejction of faulty absorption, as manifested by the indurated and painful areas often found to exist for a long time at the seat of injection. In casting about for some means to overcome this objection I selected as a menstruum in which to suspend the mercury a sterile aqueous extract made from the contents of the thoracic duct of the healthy bullock. This solution, I find to be not only nonirritating to the tissues, but when used as a vehicle in which to administer the benzoate of mercury prevents pain and induration. Furthermore, I have found the constitutional effects of this preparation to be much more marked than those of a corresponding dose of the drug otherwise given.

Since my return to the States, I have had occasion to treat many cases in which syphilis and tuberculosis were coexistent. In nearly all of these cases, I used the lymph described before during some part of the treatment. The results attributable to the use of the mercurial may be briefly stated.

Those symptoms which were directly due to syphilitic infection were promptly and unmistakably influenced by the mercurialized lymph, and this improvement was brought about by surprisingly small doses of the lymph. In many cases five minims (representing one twentieth grain of benzoate of mercury administered hypodermatically, not into the muscular tissues, daily, proved to be a maximum dose.

In no instance did I find the mercurial to directly modify the coexisting tuberculosis.

For the relief of the tuberculous process, I depended in most cases upon the antituberculous lymph described in my article, Animal Therapy, in Tuberculosis (*New York Medical Journal*, December 7, 1907). These two remedies were used conjointly and alternately in many cases, each preparation addressing itself to the disease in which I had been accustomed to use it when occurring singly and alone, i. e., the antisyphilitic lymph (A S L) in syphilis, and the antituberculous lymph (A T L) in tuberculosis. Indeed, in many cases it was possible in this way to actually classify the individual lesions,

i. e., as to whether they were syphilitic or tuberculous in origin.

The following cases will serve to illustrate:

Case I. Male, aged forty years. A clearly defined history of syphilis contracted ten years before was given. This had been treated for a short time and in a desultory way soon after its appearance. When the patient presented himself for examination, he complained of persistent headache, recurrent sore throat, and excruciating pains in many of the larger joints. The shin bones as well as those of the forearm were much enlarged; locomotion was seriously intertered with. Add to these symptoms the following, eminently tuberculous in their character, and we have the composite picture of intercurrent syphilis and tuberculosis.

Hæmoptysis, afternoon temperature of from 101° to 102.5° F. Profuse night sweats. Extreme soreness over right lung, persistent pleuritic pain. Mucopurulent expectoration swarming with tubercle bacilli Marked hepatization of upper right lobe and the apex of left. Emaciation no doubt attributable to both diseases.

In this case, a thirty days' treatment of the antisyphilitic lymph (A S L) was given; daily injections of ten minims (one tenth grain benzoate of mercury). This completely disposed of the headache and sore throat and relieved much of the pains in the limbs, likewise the shin bones showed less enlargement, and the patient was able to move about with more comfort.

A change was then made to the antituberculous lymph, which was administered for a month, with a corresponding improvement as far as the tuberculous symptoms were concerned. Temperature gradually returned to normal, night sweats ceased, cough and expectoration subsided, with but few tubercle bacilli present.

While there was marked amelioration in symptoms, both syphilitic and tuberculous, I concluded to continue treatment giving the two remedies alternately. This was kept up for six weeks, when the patient's condition being in every way satisfactory treatment was discontinued.

Case II. Female, æt. eighteen. No history of syphilitic infection could be obtained but symptoms of secondary and tertiary lesions were unmistakable. A stubborn sore throat, violent headache, and swelling of the forearms and shin bones, together with excruciating pains, were symptoms which could not be attributable to any other disease. In this case also extreme emaciation was present. There was a history of night sweats, intractable, periodical diarrhœa. Nausea and distress after eating. Temperature elevation in afternoon of from 1.5 to 2.5 degrees. Scanty expectoration contained tubercle bacilli. Marked hepatization of both lungs. Emaciation of this patient when I began treatment can only be expressed in the words "a living skeleton."

Treatment aside from local and nutritional, consisted of thirty days' use of A S L, which cleared up all throat symptoms and relieved pains, so that patient could get a moderate amount of sleep. I was much impressed by sensitiveness of this patient to the action of the mercurial. Before coming under my observation she had been taking mercury and the iodides against which the stomach rebelled and which had certainly aggravated the intestinal disturbance. Following the mercurial injections, there was no digestive disturbance, in fact the patient's appetite began to improve at once. A thirty days' treatment of A T L followed the mercurial which greatly improved the patient's condition, there being no further disturbance in the bowels. Night sweats ceased, and the temperature seldom exceeded normal.

As in my first case, alternate doses of A T L and A S L were administered for thirty days, when the patient was so much improved that I sent her to the country. Treatment was completed in this case about nine months ago and this patient is now in a very fair physical condition, has taken on flesh, and performs a moderate amount of household work without appreciable fatigue.

Case III. Female, æt. twenty-six. Married. There was a history of syphilitic infection previous to her marriage. Several miscarriages should probably be attributed to this circumstance. When I first saw patient, she complained of sore throat, hoarseness, and was annoyed by a harrassing cough. Emaciation was extreme. In addition to pulmonary involvement of a tuberculous nature, there was much disturbance of the bowels with periodical diarrhœa. A deep rectal fistula of long standing was found. Examination of the pharynx revealed the presence of both tubercle bacilli and *Spirochætæ pallidæ*.

Regarding the tuberculous feature as the more important factor in this case, I placed the patient upon ten minim doses of A T L which was continued for sixty days without interruption, as the improvement was continuous in all the features excepting the fistula. This had been curetted in the mean time and treated with stimulating applications. The destructive process had spread slowly and I concluded to begin the use of A S L, after having isolated the spirochætæ by means of a specimen obtained from the wound.

The patient's condition being much improved, she was placd under an anæsthetic and the fistulous tract was completely ablated. Under the use of A S L the wound healed kindly, so that in thirty days this was disposed of. An additional month of mixed treatment using A T L and A S L upon alternate days restored this patient to health. This case was treated three years ago with no recurrence of her former trouble.

I might recite the history of many similar cases in which the existence of these two diseases was established beyond a question, but would in this way probably add but little strength to my original contention, viz., that when found concurrently, each disease, syphilis and tuberculosis, must be treated as an independent pathological entity. That whatever improvement seems to follow other than specific treatment, in either case must be attributed to a strengthening of the natural defenses of the body, and to no direct action upon the pathological condition.

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NOTES ON A FEW PREVALENT EYE DISEASES.

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Acute Conjunctivitis. A classification of cases of acute conjunctivitis based upon macroscopical appearances of the inflamed lids and of the discharge is of doubtful aid in correct therapeutics. The terms acute catarrhal, mucopurulent and purulent conjunctivitis give little data upon which to found a common sense and scientific treatment. Hitherto our microscopical attention has been directed wholly toward ophthalmia neonatorum and gonorrhœal conjunctivitis. All other types have been grouped carelessly together and discussed alike. To-day we are working toward a classification upon a bacteriological basis. The time will come when each type of acute conjunctivitis will have its recognized specific cause or group of causes and its specific remedy. As, for example, we now are putting into clinical practice our laboratory knowledge that the Morax-Axenfeld diplobacillus is destroyed by solutions of zinc salts which have no appreciable effect upon other forms of conjunctival infections.

Microscopical study of acute conjunctivitis leads not only to a rational and a specific therapeutics, but the increased data gathered concerning ætiology, prognosis, and prevention aid in discovery and eradication of epidemics. As our bacteriological knowledge increases and supplements our clinical knowledge we discover that cases which formerly appeared macroscopically similar are now dividing

themselves into classes that are becoming gradually more distinct. While each individual form of infection does not give an absolutely typical clinical picture yet many forms such as the diplo bacillus, gonococcal, diphtheritic, and, in some localities, the Koch-Weeks, and pneumococcal present certain relative characteristics which make a provisional diagnosis possible. Microscopical diagnosis must establish this in order that facts relating to contagiousness, complications, and treatment may be used most effectively.

Many mild cases of acute conjunctivitis, caused probably by eye strain, dust irritation, or by a nasal or sinus catarrh may show no bacteria, or an increase in number of those normally in the conjunctiva, the white staphylococcus and the *Bacillus xerosis*. All other cases display pyogenic organisms.

In all forms except the gonococcal and diphtheritic the prognosis for sight is excellent, for corneal involvement is rare. In gonococcal and diphtheritic infections destruction of the cornea begins early and progresses rapidly, due to a direct action of the toxines upon the epithelium, the gonococcus causing suppuration, the bacillus of diphtheria necrosis. In pneumococcus cases serpiginous ulcers may develop, though rarely, and then only through an abrasion upon the surface of the cornea.

It is conceded generally that to prevent ophthalmia neonatorum the eyes immediately after birth must be cleansed with a bland collyrium and then receive into the conjunctival sacs an instillation of a disinfectant that will give the greatest amount of disinfection with the least amount of irritation. Silver salts have been found to meet always these requirements, but as to which of these is the most efficient opinions differ.

The organisms found in ophthalmia neonatorum are mostly the gonococcus, the *Streptococcus pyogenes* and the *Staphylococcus pyogenes*. Silver nitrate in two per cent. solution will prevent the growth of these latter organisms and kill the gonococci in one and a half minutes, but produces usually a silver catarrh unless washed from the eyelids with salt solution a short time after its application. A one per cent. solution of silver nitrate prevents the growth of the *Streptococcus* and *Staphylococcus pyogenes*, kills the gonococcus in three minutes, and seldom produces silver catarrh even though unwashed from the conjunctiva. Argyrol and protargol are nonirritable, and in strong solutions (argyrol, from twenty to thirty per cent., protargol, five per cent.) prevent the growth of the gonococci, but have no practical effect upon the staphylococcus and streptococcus. As the latter bacteria alone or with the gonococci are the frequent cause of ophthalmia neonatorum it seems logical to confine ourselves to the use of a one per cent. solution of silver nitrate as a prophylactic and to retain argyrol and protargol as valuable adjuvants in the treatment of developed cases.

Trachoma. In 1906 I ventured the opinion that "cases of trachoma present themselves under two distinct forms of the disease; or better, perhaps, as two distinct diseases now included under the one term." Further clinical observation has accentuated the truth of the second half of this statement. Final proof must come from the microscope which is still not making satisfactory practical progress in the bacteriology of trachoma. In spite of enthusiastic reports we have not yet discovered positively the cause of trachoma. Although the trachoma bodies or chlamydozœn of Prowazek have been found exclusively in trachoma yet they have not brought about an attack of trachoma when inoculated into the conjunctiva of lower animals. Nor have these bodies been found in all trachoma cases, being numerous in acute but rare if present at all in chronic cases.

The first of these two diseases is simple trachoma as found in school children and differentiated by the size and appearance of the granulations from follicular conjunctivitis which arises mostly from eye strain. The second is succulent trachoma generally considered the advanced stage of simple trachoma after rupture and cicatrization of the granulations. Each of these diseases is clinically distinct arising in the conjunctiva as a separate disease and in its entire course differing markedly from the other. It does not appear, clinically, that one ever is derived from the other or that the two ever are mixed. A stage transitional from one to the other we do not find.

Simple trachoma affects only the conjunctiva and seldom gives rise to severe subjective symptoms. Succulent trachoma is serious from its incipiency, subjectively and objectively, for the infiltration that is characteristic of the disease affects not only the conjunctiva but also the underlying tissues especially the tarsus. Simple trachoma begins with the formation of conjunctival granulations that increase in number till the folds and fomices are filled with them. Mild cases resolve spontaneously, severe cases remain as a constant source of contagion to others. The granulations, however, do not rupture, scar tissue does not form, and pannus never is developed. Succulent trachoma, though seen mostly in immigrants from southeastern Europe, can be studied in its incipiency amid our own population, particularly school children. It begins with a conjunctival infiltration that spreads superficially and deeply. A deposition of connective tissue may begin early in the inflamed lid. The lids become heavy and succulent, presenting granulations less in number than in simple trachoma. The cornea becomes affected from direct infection as well as from mechanical irritation of the rough lids. If pannus were due to mechanical irritation alone we would not fail as we do to find it in severe cases of simple trachoma. Furthermore, if pannus were mechanical in origin it would disappear as the hypertrophy of the conjunctiva diminishes, yet our worst cases of pannus are those that persist for months after the conjunctiva has returned to a normal appearance.

In this country acute succulent trachoma is very rare, the majority of cases so diagnosticated being a mixed infection, an acute pneumococcal or Koch-Weeks's conjunctivitis engrafted on a chronic succulent trachoma that previous to the catarrhal or purulent infection had given no subjective signs.

The treatment of trachoma, simple or succulent, varies with the severity of the case. All cases presenting masses of granulations or hypertrophy need scarification and expression followed by application of a caustic. By this means simple trachoma can

be cured in from seven to ten days. Succulent trachoma demands treatment extending over many months, if not years, with repeated scarifications and frequent use of a caustic.

A large clinical experience has proved that the best caustic in the treatment of trachoma is a solution of bichloride of mercury, 1 to 500. In simple trachoma operation often is sufficient for a cure, the caustic being used as an additional measure. In succulent trachoma the caustic is absolutely necessary and must be applied every day or two by a cotton swab rubbed vigorously not only upon the tarsal conjunctiva but deep into the upper fornix, which if neglected becomes a constant source of reinfection. At present it is impossible to determine whether the effects of the bichloride are mechanical, germicidal, or a combination of the two; at any rate the results are all that can be desired, considering the insidious and tedious nature of the disease with which we have to contend. It is rapid in action, practically painless after a few applications, and does not lead to the formation of connective tissue adhesions but hastens the return of the conjunctiva to a normal condition.

Eczematous Keratitis. Eczematous keratitis is one of the most common of eye diseases and is limited almost exclusively to childhood, ceasing at puberty and when found in adults having been carried over from early years. It is peculiar to children living amid an unfavorable dietetic and sanitary environment. In the thin, pale, flabby, "scrofulous" child at the end of the second or third year a little nodule with a hyperemic base develops gradually or suddenly after an acute infectious disease upon the ocular conjunctiva or upon the epithelial layer of the cornea. When upon the cornea the epithelium quickly ruptures and a small, gray ulcer results, usually superficial but frequently involving the deep corneal tissue in which case it has a yellow purulent appearance. Often the ulcers are multiple and affect both eyes. When the nodules are restricted to the conjunctiva another phase of the same disease is present, phlyctænular conjunctivitis.

Generally with the corneal ulceration or the phlyctænular conjunctivitis an eczematous manifestation develops upon the external canthi, the ears, scalp, and anterior nares. The same pathological process is at work in each region, the formation of nodules and their rupture. The eczema is of the moist variety, and the secretion containing the *Staphylococcus pyogenes aureus* or other infectious microorganisms is carried by the fingernails or otherwise from one part of the face to another. The eczema attacks the mucocutaneous junctions which become moist, red, and thickened. They bleed easily. Preauricular and submaxillary glands frequently enlarge and suppurate. The severe subjective symptoms about the eyes, lacrimation, and extreme intolerance to light, are caused largely by the irritation arising from the corneal denudation and canthal fissures.

The bacteriology of the disease is still unsettled. Various microorganisms have been found upon the conjunctival and corneal lesions but their introduction into other conjunctiva or cornea has never produced a typical eczematous or phlyctænular attack. The basic cause may be endogenous. We know that the opsonic index of the blood serum of patients suffering with this disease is lowered for tubercle and rises with improvement of the lesions. The toxine may be tuberculous and the phlyctænules caused by dead or attenuated tubercle bacilli floating in the blood; yet it has been shown that phlyctænules are not tuberculous lesions.

Probably the direct infection is derived through the lacrimonasal canal from nasal obstruction due particularly to adenoids.

The course of the disease is very chronic, consisting often of several intermittent attacks, lasting over a period of many months or years. The prognosis for useful vision is good, for the corneal ulcers are usually small and superficial leaving insignificant scars. Vision may be affected seriously, however, if the ulcers are large or deep.

The treatment must be constitutional and local. The diathesis, whether we call it eczematous, scrofulous, or tuberculous, must be combated with common sense, fresh air, good and proper food, and tonics. Atropine and hot bathing are indicated so long as the cornea is involved. Adenoids, which are usually present, must be removed. At best the treatment must extend over a period of many months before a permanent cure can be attained.

Myopia. The subject of axial or true myopia, its causation and treatment, is of acute interest at the present time on account of its relation to school hygiene. Its origin is hidden still in partial obscurity, but we can discern enough of it to be sure that nearsightedness is one of evil results of the action of modern civilization upon our physical well being.

Myopia in the newborn is very rare. Its prevalence begins in the primary school grades and increases rapidly through the higher classes.

The constantly increasing use of congenitally or inherited defective eyes for near work is generally accepted as sufficient to account for the development and progress of myopia, but upon the exact manner of this action observers are not of one mind. All agree, however, upon certain causative factors. There seems to be necessary a predisposing or inherited weakness lodged in the posterior pole of the eye. In such an eye the physiological hyperæmia resulting from fatigue of near work persists after the work is completed, leading in time to active inflammatory changes. Corneal opacities or hyperopic astigmatism by interfering with clear vision force an unwonted strain upon the intrinsic muscles and tunics of the eye. During near work the intraocular tension is increased either by the action of accommodation and convergence, which is doubtful, or by the pressure exerted on the globe during convergence by the external muscles, especially the superior oblique and external rectus. This increased tension produces an ectasia of the sclera to the temporal side of the nerve head along the line of least resistance.

After the development of myopia has begun two important factors accelerate its progress, 1, latent divergence or insufficient convergence rendering near vision more difficult, 2, spasm of accommodation, due to excessive near work which becoming more or less permanent increases the total amount of myopia.

Therefore it can be seen that the real cause of

myopia is probably the accumulated effect of all the factors concerned in near vision upon an inherited or congenitally weakened eyeball. As a further proof of this we find that if corneal opacities or astigmatism occur in one eye only the other eye is affected more by the myopia; and if when astigmatism of different degrees affects both eyes myopia is developed particularly or exclusively in the least astigmatic eye. This is so in both instances because the eye with the more acuteness of vision is used more in near work.

This ætiological knowledge leads to a rational treatment. The predisposing causes found in unhygienic surroundings, in school and out of school should be, and in many communities are being, eliminated. Proper feeding and hygienic rearing of children prevents eczematous keratitis, the large cause of corneal opacities. Examination under atropine cycloplegia of the eyes of all children of the first school year will detect and correct astigmatism and discover the first signs of myopia. By these means a large amount of nearsightedness will be prevented.

When myopia has developed eye glasses should be prescribed and worn at as early an age as possible, and the lenses should fully correct the refractive error up to 4 and 5 diopters. By this means the eyes are put into a state of emmetropia and excessive convergence is prevented. Above 4 to 5 dioptres under correcting glasses should be given for near, the strength of the distance as well as of the near depending upon the age and occupation, the amount of myopia, the power of convergence, the condition of the fundus, and the tendency of progression. Above 16 dioptres the possibility of ablatio lentis must be considered.

Finally, we must not forget that our chief aim in dealing with myopia is prevention.

147 East Eighteenth Street.

ACUTE INTESTINAL OBSTRUCTION CAUSED BY A FOREIGN BODY IN THE PERITONEAL CAVITY.

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The comparative rarity of intestinal obstruction, caused by a foreign body in the peritoneal cavity, presumably introduced through a perforation in the uterus, prompts the writer to report the following case:

Case. Miss I. C., aged twenty-four years, was admitted to Lebanon Hospital on May 11, 1908, giving the following history: Three weeks prior to her admission to the hospital she had had an attack of abdominal cramps and vomiting, lasting for about eight hours. She felt perfectly well thereafter for one week, when she had another attack of cramps and vomiting, lasting for about twenty-four hours. She remained well up to the present attack, which began suddenly on Sunday, May 10, 1908. While walking on the street she was seized with very severe abdominal pain and vomiting. The pain during this attack was more severe and lasted much longer and compelled her to go to bed. At first it was all over the abdomen, but gradually became most marked in the right lower quadrant. She vomited repeatedly, and on the following day she suffered intensely from thirst, but was unable to retain even small quantities of water. Bowels had not moved in spite of the repeated administration of cathartics and enemata. Physical examination revealed a moderately distended abdomen. Rigidity was most pronounced in the right lower quadrant. There was considerable tenderness over the lower part of the abdomen, but this was most marked just to the right of the umbilicus. There was no mass palpable. Temperature, 101° F.; pulse, 80, and respiration, 16. During the examination it was observed that the pain was paroxysmal in character, coming every ten minutes or so.

In view of the history of two similar attacks in three weeks, and the condition found on examination, a diagnosis of acute appendicitis was made, but on account of the peculiar paroxysmal, cramplike pains, the possibility of an acute intestinal obstruction was not excluded.

Immediate operation was performed by the writer, on May 11, 1908, about thirty-six hours after the onset of the abdominal pain. Under ether anæsthesia the abdomen was opened on the right side, through a Kammerer incision. On opening the peritonæum a considerable quantity of clear serum escaped. Digital exploration revealed a cordlike structure running from the right side toward the median line and downward, and attached to a mass of adherent intestine which it constricted. On separating this cordlike structure, which proved to be omentum, and withdrawing it from the abdomen, a foreign substance, about two and a half inches long and about one quarter inch wide was brought out with it. On examination this foreign body proved to be a pledget of absorbent cotton discolored by blood. Further examination revealed two loops of the ileum adherent at the mesenteric borders. The adhesions were broad and firm and required ligation before division. In the midst of these adhesions some more cotton was found and removed. After repairing the denuded surfaces, the cord of omentum was examined and in its lowest portion, the one which was attached to the mesentery, another piece of cotton was found firmly embedded. This part of the omentum was removed as well as the appendix.

The question arose as to how the absorbent cotton reached the peritoneal cavity. Knowing that the patient had never had an abdominal section, suspicion pointed to the uterus as the most probable organ which might have been perforated during an induced abortion. The pelvic organs were therefore carefully examined but, with the exception of a small indurated area in the lower part of the posterior wall of the uterus,—perhaps at the level of the internal os,—there was nothing noteworthy. Tubes, ovaries, and broad ligaments were normal, and the pelvis free from adhesions. The abdominal incision was closed without drainage. Convalescence was uneventful until May 28th, when the temperature rose to 103.4° F., and the pulse to 116, as the result of tonsillar diphtheria, which necessitated her removal to Riverside Hospital, from which she was finally discharged cured.

Two days after the operation, upon being asked for the date of an operation upon her uterus, she confessed to having had several abortions induced, the first about two years ago, and the last one on March 28, 1908, when about two months pregnant, or about six weeks before the onset of the present illness. She said that she had had no unusual amount of pain or other symptoms following any of the abortions. Last menstruation occurred two weeks before admission to the hospital. It would be interesting to know when her uterus was perforated, and how long the cotton had been in the peritoneal cavity before it gave rise indirectly to the acute intestinal obstruction caused by the band of adherent omentum.

In most instances in which foreign bodies have been found in the abdominal cavity, they have been left there unintentionally in the course of surgical procedures. In 1901, Schachner reported 155 cases of foreign bodies accidentally left in the abdominal cavity, including 101 cases previously reported by Franz Neugebauer. (*Annals of Surgery*, 1901, xxxiv, pp. 444 and 678.) In this series of cases, the objects most frequently found were sponges, gauze pads, and artery clamps, but drainage tubes, glass splinters, and even a seal ring have been found. In the subject of the present report, the foreign body was most likely introduced into the

abdominal cavity with an applicator, uterine sound, or forceps, which perforated some part of the uterus in attempting to induce an abortion.

A. P. Heineck (*Surgery, Gynæcology, and Obstetrics,* 1908, vii, p. 424), by diligently searching the American, English, French, and German medical literature from the years 1895 to 1907, inclusive, has been able to collect 160 cases of uterine perforation, due to perforating wounds inflicted during the course of intrauterine instrumentation; in twenty-six cases the perforating instrument had been introduced to end "an undesirable pregnancy." He stated that perforation could occur with the most startling ease in the hands of most clever operators, and was not always due to ignorance, incompetency, or carelessness. He disagreed with those who believed that this accident was not followed by alarming symptoms. Shock, hæmorrhage, injury of viscera, infection, prolapse of omentum or intestine, with or without strangulation, were the immediate causes of danger. In reviewing the cases collected by Heineck, we find the following in which foreign bodies were left in the abdominal cavity:

Marchand (*Bulletins et mémoires de la Société de chirurgie,* 1897, xxii, p. 535), reports the history of a woman, whose uterus was perforated during a curettage, by a sound which was abandoned in her body. She was confined to bed for three months and continued in a state of invalidism for about a year, until the sound was removed by laparotomy, having been found between two folds of mesentery. The sound was 23 cm. long and had a diameter of 1¼ cm. Recovery.

Joseph Tabor Johnson (*American Journal of Obstetrics,* 1902, xlv, p. 453), reported the case of a patient who had an abortion induced by inserting into the uterus a No. 3 flexible bougie. The uterus was perforated and the bougie was found almost entirely folded in and covered over with omentum, in the effort of Nature to repair the damage and to prevent injury to the abdominal organs. The bougie was removed three days later by abdominal section, which was followed by recovery of the patient.

Treub (*Zentralblatt für Gynäkologie,* xxx, No. 28, p. 302, 1906), records a case in which a midwife introduced a bougie to induce labor. The bougie was lost, on account of hæmorrhage and fever. A tumor was felt in Douglas's pouch, which was incised, evacuating pus and removing the lost bougie. Recovery.

Thorn (*Zentralblatt für Gynäkologie,* xxviii, p. 1762, 1904), reports a perforation of the uterus by an elastic bougie introduced to induce abortion. Symptoms of peritonitis developed early, necessitating a laparotomy, during which the bougie was found lying obliquely in Douglas's cul-de-sac. The bougie was removed, and the patient recovered.

B. S. Talmey's (*New York State Journal of Medicine,* vii, p. 319, 1907) patient had introduced a bougie into the uterus to induce abortion. The bougie slipped, and she saw no more of it. She was curetted, and upon inserting a uterine catheter to wash out the uterus, the catheter slipped in about 15 cm. Laparotomy revealed the bougie lying in front of right kidney. The uterine perforation was sutured and Douglas's cul-de-sac drained through the vagina which was followed by prompt recovery.

D. S. Fairchild (*Journal of the American Medical Association,* xlii, p. 944, 1904), reports the history of a patient who attempted self abortion by introducing a straightened hairpin. An abdominal incision was made and the pin found high up, the upper end near the diaphragm. The patient got well.

M. Bullard (*Transactions of the Western Surgical and Gynæcological Association,* p. 60, 1903) reports a case in which a bone crochet hook was introduced to produce abortion. It slipped from the woman's fingers into the abdominal cavity. The cervix was dilated, but no foreign body was found. Six months later the patient became pregnant. The crochet hook was finally discharged through the anterior abdominal wall. She suffered but little pain, was not sick, and delivery was normal, followed by recovery.

Since the publication of Heineck's paper, there appeared a report of a case seen by Ranzi (81. Versammlung deutscher Naturforscher und Aerzte in Salzburg, 21-24, September, 1909, in *Zentralblatt für Chirurgie,* November 27, 1909, No. 48, p. 166.) A woman, thirty-two years old, had a rectal resistance, which was continuous with a swelling in the ileocœcal region. Abdominal section revealed a semisoft catheter, completely surrounded by omentum, which was introduced into the uterus three months before by a midwife.

In studying the pathological changes which result from the presence of foreign bodies in the peritoneal cavity, Schachner (*loc. cit.*) reviews the experiments of Bünger, On the Healing of Foreign Bodies Under the Influences of Chemical and Microparasitic Irritation (Verhandlungen der Deutschen Gesellschaft für Chirurgie, XXIV Congress, 1895. Abstract in *Annals of Surgery,* xxiii, p. 225), and finds them in the main corroborated by clinical evidence.

It is not the purpose of the writer to enter into the details of the subject, as it is thoroughly dealt with by Schachner, who states in part that: "The effect of a foreign body in the abdominal cavity depends primarily upon its sterility. If it is not of an aseptic nature a general infection ensues, rapidly terminating the life of the individual. If the foreign body is practically aseptic, the tendency is as von Bünger has shown, for it to become enveloped in a capsule of fibrous exudate interspersed with leucocytes. The isolation is still further carried out by adhesions between loops of intestine or between intestine and omentum, or, lastly, by both in conjunction with some other organ or the abdominal parietes. In this isolated state it may remain exposed to phagocytic influence until its final removal is accomplished."

Thus, we see that a foreign body, if clean and small, may remain quiescent for an indefinite length of time; but it may, by mechanical irritation and pressure, produce suppuration or necrosis of the intestine, bladder, vagina, or abdominal wall, and be expelled from the abdominal cavity. A foreign body in the peritoneal cavity causes adhesions which may interfere with peristalsis and cause symptoms of ileus. Pain is the most constant symptom, and is usually localized and associated with

local tenderness and rigidity. There may be a localized tumor which may be felt through the abdominal wall, rectum, or vagina. The symptoms may be those of an incomplete or complete intestinal obstruction, and may recur at intervals until the foreign body is expelled spontaneously, or is removed by a surgical procedure.

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IMPORTANT PHYSICAL SIGNS IN THE DIAGNOSIS OF INCIPIENT PULMONARY TUBERCULOSIS.*

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In what follows I do not claim to set forth any new and original facts, but rather to give succinctly the main important physical signs of incipient pulmonary tuberculosis. As, thanks to careful study and observation, the diagnosis of pulmonary tuberculosis is being made earlier than heretofore, as signs formerly disregarded are considered of moment, I shall deal entirely with those appearing before well defined dulness and râles are to be detected.

Inspection. Much has been written about the "paralytic thorax" or "phthisical chest." True; this type of long, narrow, ill expanding chest is often seen, but that its presence in diagnosticating pulmonary tuberculosis is of any aid is very doubtful. It is often met with in perfectly healthy individuals, and Aufrecht asserts that the paralytic thorax is far more frequently a result of tuberculosis than a predisposing cause or a sign of diagnostic weight.

An *unilateral shoulder droop* is a sign of distinct importance. In the majority of cases the examiner is the first to detect this abnormality, it never having been noted by the patient. When this phenomenon exists, together with *limitation or retardation* of motion on the same side, the combination is very suggestive. In limitation of motion the affected side expands less than its fellow, while in retardation of motion one scapula is seen to start upon its respiratory excursion a perceptible amount of time later than its fellow, the final limit of expansion of both sides appearing to be the same. Limitation and retardation of motion, however, can and frequently do coexist.

Hollowing of the supraclavicular fossa is unquestionably of frequent occurrence in early tuberculosis, but many cases with positive physical signs are to be seen that do not exhibit this phenomenon. It has seemed to me to be due frequently to a slight amount of emaciation, and has not proved to be as early a herald of trouble as the other signs heretofore mentioned. A far more valuable sign is *flattening of the supraclavicular fossa,* which, without becoming hollowed, loses its normal slightly convex outline.

Mensuration. The relation of the perimeter of the chest to the height of the patient is noteworthy. If the perimeter is less than half the height, the fact is suspicious. This measurement is very easily taken, and should not be omitted. Mensuration of chest expansion has proved of value in the hands of some. Thus Boureille found that of 383 normal individuals, 96.4 per cent. showed an expansion of 6, 7, 8, 9, 10, and occasionally 12 or 14 cm., while of 235 individuals in the "pretuberculous" stage, 91.3 per cent. showed an expansion of only 4 cm. or less.

Palpation. In truly incipient pulmonary tuberculosis palpation has but a limited value. From the third rib to the apex anteriorly, and from the fourth dorsal spine to the apex posteriorly, palpation *with the pulps of two fingers* will often elicit small areas of increased vocal resonance that will later be found to be the seat of trouble. Ordinary palpation with the flat of the entire hand is of no value, covering as it does large areas of pulmonary tissue, the invasion of which is obviously incompatible with our subject. Fraenkel states that pressure causing pain in the intercostal spaces is, if disease of the skin, muscles, and ribs can be excluded, pathognomonic of pleuritic inflammation. So many pleuritic lesions are of tuberculous origin that this fact is worthy of note.

Percussion. In discussing percussion in connection with pulmonary physical signs, it should be stated at the outset that the lightest percussion that brings out a perceptible note is the best and most reliable. Percussion should be done with one finger only as plessor—the stroke should be from the wrist only—never from the elbow or shoulder—the plessor should rebound instantly from the pleximeter as thus the clearest and purest sound is produced. The slightest pulmonary lesions cannot be detected by percussion even if lying at the periphery of the organ. Cornet states that in general to produce any change in the percussion note the area of disease should have reached an extent of from four to six centimetres, and a depth of two centimetres. To produce flatness the focus must be at least five centimetres in depth.

True dullness is never found in incipient pulmonary tuberculosis, but a most important and trustworthy sign is a *shortening of the note and a heightening of the pitch* over one apex anteriorly or posteriorly. The value of this sign is lost if it is present at both apices, as the change in the note is so slight that it cannot be made out positively without the controlling influence of a sound apex for comparison. A most valuable aid in percussion is the sense of resistance transmitted to the pleximeter finger over an area with beginning disease. A sensation is perceived as though the finger were resting on a firmer foundation than on the opposite side.

The *"clinical" projection of the apices of the lungs* upon the surface of the skin in the supraclavicular and supraspinous fossæ can be easily and accurately ascertained by percussion. I say "clinical" advisedly, because the results of such percussion do not represent the actual anatomical projection of the pulmonary apices upon the body surface. This latter can be demonstrated with the aid of Goldscheider's instruments, but is not easy to bring out, and is, moreover, of no great practical importance. By percussing lightly from above downward along the

*Read before the North Carolina Association for the Prevention of Tuberculosis, Greensboro, N. C., March 15, 1910.

root of the neck, marking the spot at which pulmonary resonance is heard to begin, repeating this percussion upon a more posterior plane, and connecting with the skin pencil the points at which pulmonary resonance is first noted, one can obtain a graphic representation of the upper limits of the pulmonary note. The outer border of the apex can be outlined in a similar way. By comparing the results obtained on the two sides very *slight retraction of one apex* can be detected. This apical retraction is a sign of great value, and occurs in the absence of any shoulder droop, and also in the absence of supraclavicular flattening. A contraction of as little as one fourth of an inch as compared with the opposite side is both important and suggestive.

Another sign of value elicited by percussion is the *expansibility of the bases of the lungs anteriorly and posteriorly.* The lower border is found during quiet breathing and marked with the wax pencil. The patient is then directed to take a deep breath and to hold it. The lower border of the fully expanded lungs is now found and marked, the distance between the first and second percussion marks being measured with the tape measure. It will often be found that a lung with a slightly contracted apex will expand less at the base than will its fellow. Differences of less than one half an inch between the two sides are not to be looked upon as trustworthy. With slight apical retraction, and with limitation of expansibility at the corresponding base, the examiner is forewarned, and should be forearmed.

Auscultation. Despite the priority accorded by some, notably Aufrecht, to percussion changes as indicative of the earliest signs of pulmonary tuberculosis, the vast majority of authorities yield the palm to auscultatory phenomena as being most trustworthy and earliest in appearance. That such should be the case is natural, as the influence upon the breath sounds of very slight changes in the pulmonary parenchyma should supersede any changes in the percussion note. Furthermore, the personal equation plays an important part in percussion, differences in the note being obtainable by the slightest variations in the position of plessor, plexímeter, or in the force of the blow employed. These elements do not obtain in auscultation, and consequently this latter method is looked upon as the supreme court of pulmonary physical diagnosis.

All auscultation of the lungs is divided into two great classes—auscultation of breath sounds, and auscultation of adventitious sounds. We are here concerned with the former, for in this day and generation râles cannot be considered as signs of the incipiency of tuberculosis.

The earliest *respiratory change* noticed is that termed *granular, rude, or rough breathing.* It was first pointed out and described by Grancher and by Woillez, and though difficult to describe in words, is clearly appreciated when heard. It is usually found either in the supraspinous or supraclavicular fossa on one side, in my experience the supraspinous fossa being the seat of election. Instead of inspiration being uniform and having, if I may use the term, a "velvety feel," the sound of the air current suggests that it is passing over a number of slightly roughened uneven spots. This sound has been likened to that produced by rubbing together grains of wet tapioca. The presence of this type of breathing (which usually occupies the inspiratory phase and that alone) is a sign of the greatest diagnostic value. When *localized and persistent*, it is (always it must be borne in mind in connection with other symptoms) almost a sure sign of tubercle formation, and is supposed to have its origin in the air current passing over uneven places caused by the projection of discrete tubercles into the lumen of the terminal bronchioles.

Feeble breathing occurs from obstruction to the flow of air by tubercles or mucus. Its presence alone is not of great diagnostic import in early tuberculosis save if, as Minor points out, it is localized to an apex and persistent after cough.

Harsh breathing, usually in combination with slightly prolonged blowing or bronchovesicular expiration can hardly be termed one of the earliest signs of pulmonary tuberculosis. Nevertheless it is worthy of mention, for it is unquestionably the sign most often heard upon examination of patients with beginning disease for the reason that they do not as a rule consult the physician while the disease is still in what Grancher terms the "stage of germination" which is characterized by "granular" breathing. When harsh breathing is present, localized at an apex and persistent, it is a valuable sign. It is most frequently accompanied by a few dry crackles upon cough.

Brown lays stress upon undue transmission of the heart sounds to an apex, especially the right. If this transmission is marked it is a sign of value, speaking for deep seated infiltration.

Vocal resonance often gives information of value. Its increase at the *left* apex is of far more value than its increase at the right. If the patient is left handed and vocal resonance on the left is increased, the importance of the fact becomes greater. The examiner should never fail to ascertain whether the patient is right or left handed, as in the latter case slight changes in percussion or auscultatory phenomena may be attributable to greater muscular development than would obtain were the patient right handed.

The auscultatory phenomena distinguishable in the "prerâle" stage of pulmonary tuberculosis are not numerous, but their small number is in inverse proportion to their importance. By knowing and studying the normal chest constantly, concentrating the attention first upon inspiration and then upon expiration, by carefully comparing corresponding areas on the two sides, very minute changes in the vesicular murmur can be detected especially from the fourth rib anteriorly and from the sixth vertebral spine posteriorly to the apex. It is these minute changes that denote beginning disease, the recognition of which paves the way for early diagnosis, correct treatment and complete recovery.

These, in brief, are the important physical signs pointing to beginning tuberculous involvement—no one of them in itself pathognomonic, each one, in connection with the others and with the general symptoms, suggestive. Familiarity with them all and with their interdependence is necessary for an accurate diagnosis. Their importance, and at the

same time, their fallibility give us an additional example of the fact that internal medicine is not an exact science but an art, and that it is only by a careful consideration of all phases of a given condition, and by eliciting each and every sign that may help us in our deductions are we going to reach the limits of human accuracy in the diagnosis of internal disease.

33 Haywood Street.

ACONITE.

"Queen Mother of Poisons" ("Wolf's bane"; "Leopard's bane"; "Women's bane"; "Venus's Chariot"; "Scorpion"; "Monkshood"; "Blue Rocket"): Its Place in History, in Mythology, in Criminology, in Botany, in Therapeutics, and in Toxicology.

By John Knott, A. M., M. D., Ch. B., and D. P. H. (Univ. Dub.); M. R. C. P. I.; M. R. I. A, etc., etc.
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The records of the practice of poisoning must ever remain one of the foulest blots on the much stained pages of the annals of the human race. They are also likely to retain a perennial interest—for the lay public as well as for the specialist—appealing as they do so strongly to the emotional side of human nature. The repeated occurrence of murder, even in many of its revolting types, still proceeds in even the most highly civilized communities; and the number, as well as the variety, tends, unhappily, to show that the extension of liberty and the diffusion of education (and the "general intelligence" dependent thereon) still leave a very fair proportion of employment for the criminal lawyer as well as for the moral and religious teacher. The fact that the struggle for life is increasing in intensity—especially in the intellectual domain, while the limitations of individual action have been lessened, and the facilities for mischief—with a knowledge of the methods by which it can be effected—have become so much more readily attainable, tends to maintain the uniformity of the standard of some of the most revolting forms of crime, even in presence of all the much vaunted philanthropy and altruism of our advanced "modern" civilization. Throughout the cosmopolitan arena of human emulation there has always—and very necessarily, indeed—existed the universal endeavor of each individual to disarm or disable his antagonist. At every period of history—and the same observation necessarily holds true of all the units and communities of animated nature—force has been the usual weapon of the strong and fraud of the weak. Before the expansive growth of civilization bloodshed was everywhere, and always, freely resorted to as the readiest and surest means of securing self preservation and attaining the ends of ambition. As communities increased in numbers, and life and its conditions became more stable, mutual concession and adaptation became absolutely necessary. Accordingly, more subtle methods of injury and of destruction were discovered and adopted. Poisoning thus came to be a later form of practice than the destruction of life by shedding of blood. It also was—very characteristically—a weapon of the physically weak rather than of the strong; of the subtle and the intellectual rather than of the violent and the coarsely energetic. For these distinctive reasons it became a special resort of the Oriental and subtropical residents rather than of the natives of the northern zones; also of the female rather than of the male, of the oppressed rather than of the oppressor, of the conquered rather than of the conqueror.

The very existence of poisons constitutes one of the specially mysterious items in the mysterious cosmic scheme of an inscrutable Providence. Every powerful medicinal agent is also a possible poison. And even so simple a condiment as our common table salt has proved a lethal agent when taken in large quantity on an empty stomach. But the properties of each of the more deadly poisons present something weirdly interesting in their individual and collective features. Italy, the fountain of our learning, our law, and our religion, proved also—in regard to northern and western communities—to be the nursing home of the skilled poisoner. Nevertheless some of its "popular" toxicological weapons were hardly describable as either subtle or sharp-edged. Arsenic can hardly lay claim to either of these epithets; and, accordingly, the mysterious powers attributed to the famous *Aqua Tofania,* of which recent researches have shown it to have been the "active principle," must be forever relegated to the domain of emotional mythology. To a corresponding fate must assuredly be consigned the monstrous story of Cæsar Borgia's ring, the subtle sting of which, we have been asked to believe, caused the inevitable death of the victim whose cuticle it was made to penetrate in the apparently friendly operation of shaking hands. But the primordial germ of this item of criminal mythology may, I feel considerable confidence in stating, be found in the figure and description of Ambroise Paré's *surgical ring*, which may be found in the monumental work of the great "father of modern surgery."

There remain, however, other genuine toxicological items (and histories thereunto attached) which furnish tales quite as thrilling as those of the most romantic inventions. Among these *aconite* justly claims the formost place. Indeed, the Aconite can, I believe, justly and proudly claim the dignity of being *Omnium Orbis et Urbis Venenorum Mater et Caput.* Let us listen to the thrilling appreciation of this agent which is contained in the earliest Western (surviving) encyclopædia of therapeutics:

"Aconite alone, if there were nothing els, is sufficient to induce any man to an endlesse admiration and reverence of that infinite care and diligence which our antients imployed in searching out the secrets of Nature; considering how by their means we know there is no poison in the world so quicke in operation as it. . . ." Thus cogitated the elder Pliny, as he contemplated the mysteries of Nature which he found manifested in some of the deadly powers of certain of the individual items of the vegetable kingdom. And, after some further philosophic reflections, he goes on to say (as represented in the English version of *Philemon Holland, Doctor of Physicke*): "I assure you, that there is nothing so bad but it hath some goodnesse in it, and may be vsed wel. And therefore dispensed withall I looke to be, if I who hitherto haue written of no poisons, put down the description thereof; to the

end that a man may know it, and by knowing, take heed and beware." Thus the foremost place in the literature of toxicology was given to this vegetable in the first encyclopædia of *Materia Medica* known to the annals of western science. This fact by itself furnishes the present writer with the hope that he may be "dispensed withall" on the occasion of his placing before the readers of the *New York Medical Journal* the principal items of our accumulated and capitalized aconite lore and science—even in this rapidly progressive generation of antiseptic medicine, of aseptic surgery, and of bacteriological pathology.

In the course of his reflections on aconite and its antidotes, the same author goes on to say—in further emphasis of his admiration of the attainments of his predecessors in exploration of natural history: "Our ancestors in times past staied not thus, but found out and deliuered vnto vs proper remedies also for wilde beasts; . . ." And, after taking notice of the knowledge displayed, in the matter of the injurious qualities of herbs, by the *animalia fera* which range the pasture field and the forest, he goes on to add: "Well, be it chance or be it Nature that hath thus ordered the matter, certes a great shame it had bin, that all other creatures should haue knowne thus (as they do) what is good and profitable for them, and man only remain ignorant. But such was the industrie and goodnesse of those ancestours of ours in time past, that they not only deuised means, but also deliuered to posterity, how this venemous herbe Aconitum might be most safely and commodiously mingled in those collyries and medicines which be ordered for the eies." Still, in a modern investigation of this important and interesting subject, it is desirable to interject at this stage the veracious item of toxicological history that —notwithstanding the enthusiastic admiration of Caius Plinius Secundus (Senior) for the scientific industry and therapeutic attainments of his ancestors and predecessors —it must be admitted that it was as an agent of evil, unrivalled in its sphere, that aconite was specially recognized—and utilized—in ancient and mediæval times. Yet another point of view, from which such questions may be regarded with speculative—and not uninstructive—interest, is afforded by the very probable surmise that the more potent powers of many energetic agents of therapeusis obtained from the vegetable kingdom were first taught by observation of their deleterious effects when taken into the system "in quantity."

Curious instances of the confusion of scientific fact and etymological fancy are supplied by an examination of the recesses of toxicological nomenclature. The variety of epithets that have been employed to decorate the plant which forms the subject of the present article offers a conspicuous example. And another interesting specimen, derived from the mineral kingdom, offers a case in point which will bear citation in the present connection, for the toxicological powers of *antimony* have more than once been placed conspicuously before the public in comparatively recent years. This element, which was used by Constantinus Africanus (of Europe's earliest medical school, the celebrated *Schola salernitana*), and was probably first alchymically isolated and therapeutically utilized by Arab investigators, who were the apostles of science and learning to western Europe for many centuries, has also specially distinguished itself by providing a hitherto insoluble crux for the etymological inquirer. The original Arab appellation of *ithmid* has been plausibly supposed to lead (through some intermediate variations) to the Greek στίμμι, and thence to the Latin *stibium*. The Oriental name has also been supposed to pass through the "spontaneous evolution" series of *athimodium, atimodium, atimonium, antimonium* in its progressive descent through the "dog Latin" manuscripts of the Middle Ages. Successful fusion of the two suggestions would, of course, make *antimonium* and *stibium* divergent—racial—specimens of the spelling of a single name. Whatever may have been the hitherto unverifiable facts of the case, we find that the French spelling, of *antimoine*, suggested—inevitably, too—the English equivalent of "Monk's bane," and led to the invention of fantastic accounts of the efficacy of its destructive powers as displayed on the persons of the tenants of monasteries—a derivation of the word *antimony* which strongly appealed to even the great "Father of English lexicography" himself. Perhaps the fact that medicinal antimony was first brought prominently under the notice of western Europe by the rather shadowy investigator, Basil Valentine, Monke of the Order of St. Bennet, led to the emphasis of its monasterial etymology. But a clinical antithesis of the therapeutic reputation implied is furnished by the fact that the "*Triumphal Chariot of Antimony*" of that writer placed this element high above all others in physical importance, and informs the reader that "the shortness of life makes it impossible for one man thoroughly to learn antimony, in which every day something of new is discovered."

The recognition of our aconite as a powerful, and accordingly valuable, therapeutic agent may indeed be said to date from the publication of the epoch-making commentary of Matthiolus on the *Materia Medica* of Dioscorides. In that truly, and worthily, monumental folio, the "Father of Modern Therapeutics" reports the results of certain experiments, at the making of which he assisted, which were carried out under the order of Pope Clement VII, on the persons of two criminals under sentence of death, for the purpose of testing the value of an antidote of unique reputation, when employed in antagonism to aconite—the most deadly of all known poisons. Of the persons of the two criminals, one was utilized for the *test* and the other as the *control* experiment. The results obtained are reported by our author in the following words:—

Hujus immanitatem vidimus nos anno a Christo nato 1524, mense Novembri in Capitolio, Clemento 7. Pont. Max. anno primo. Nam cum decrevisset experiri olei cujusdam præstantissimi vires quod Gregorius Carativa Bononiensis Chirurgus tunc præceptor meus, contra delcteria medicamenta & venenosorum animalium quorumcunque morsus paraverat, jussit Pontifex venenum dari duobus latronibus, quos leges damnaverant, quo suorum facinorum pœnas luerent, laqueo vitam finire, ut in iis olei hujus experimentum fieret. Horum alteram, qui plurimum Napelli sumpserat, dulciariis panibus commistum, pontificii medici statim oleo inungendum præbent, qui post tertium diem sæpius oleo

perunctus evasit incolumis; quanquam non sine magna formadibilium symptomatum accessione. Alterum vero, cui longe minus venenati panis exhibuerant, oleo inungi vetant, ut assumpti veneni effectum sævitiamque cernerent. Id quod illis rei exitus facile comprabavit; quandoquidem paucis post horis obiit infelix, in omnibus incommodis, cruciatibus, & symptomatibus correptus, quæ ab epoto Napello provenire scribit Avicenna.

The occurrence of this gruesomely interesting incident of the history of experimental human physiology affords a peculiarly illuminating insight into the relationship of scientific research to Christian justice and charity in the early years of the dawning Renaissance spirit of restless universal inquiry which ushered in the explosive movements of the Reformation.

The facts show that, then as now, the hankering after a universal—panaceal—reagent for the treatment of all physical ills of the human economy pervaded the atmosphere of hopeful thought, and was accompanied—even in the highest places—with a genuine belief in the existence of the same, and an inspiring reliance on the prospective possibility of its ultimate discovery and utilization for the relief of human physical suffering. Has not the long drawn deference of the fulfilment of such hope given us the hypnotism, the Eddyism, the faith healing of recent years? And before passing from the record of that remarkable duplex experiment, which saved one human life and substituted a less horrible exit from its stage in the other case, I would just remind inquiring readers, in passing, of the fact that it was carried out *thirty-seven years before the birth of Francis Bacon,* England's most famous Lord Chancellor; with whom so many of the highly educated have been taught and still believe, that the primordial germ of modern experimental philosophy originated—and 104 years before the publication of William Harvey's *De Motu cordis,* which is the earliest volume that represents the fruitful application of British experiment to scientific physiology.

That this special variety of experimentation was not limited to Italian soil is also proved by the report of another "observation" in the carrying out of which the same distinguished observer also took a principal part:—

Vidimus id etiam Pragæ Metropoli Regni Bohemiæ, anno MDLXI. Mense decembri in Latrone quodam suspendio damnato, cui Napelli radix a carnifice data est drachmæ pondere rhodosaccharo excepta, Cæsareis Medicis præsentibus, ut antidosi famosi cujusdam vires explorarentur, an contra Napellum id præstaret, quid antea in altero damnato, qui Arsenici drachmas duas ebibit, efficacissime præstiterat. Lubens itaque voravit ille lethiferum Napelli pharmacum, utpote qui non solum sibi conducibilius censebat, veneno in carcere necari, quam, laqueo publice in patibulo suspendi, sed quod etiam speraret se a nobis servari posse.

A considerable interval having elapsed without the supervention of any symptoms, the culprit received another dose, as a suspicion of the efficacy of the (Bohemian) aconite which had been used arose in the minds of the medical attendants. Another period of two hours then elapsed without apparent consequences, after which the subject of the toxic experiment was left alone in his cell with Matthiolus. Thus another uneventful hour elapsed, at the end of which characteristic symptoms proceeded to develop: "tandem obmutuit, & obiit simul, *livida facta facie ac si laqueo suspensus.*"

The last clause of this quotation, which I have purposely italicized, furnishes convincing testimony to the closeness of observation of the illustrious physician whose gloomily instructive task it was to undertake the supervision of the procedure in question; and also to the accuracy of the record which he has transmitted to posterity with so vivid a power of word painting. And it has furnished to the writer of this article a conspicuous item of proof of the incalculable loss to therapeutic progress which has ever resulted from the want of preservation of a continuous historic record of the observations made by reliable therapeutists—who were fully abreast with the physical science and logical reasoning of their respective generations—on the effects of the clinical use of the more powerful items of the ever varying *materia medica.*

Our author then proceeds to the details of a *Historia tertia,* which records the facts of a corresponding toxicological test (and control) experiment carried out for the purpose of deciding the question of antidotal efficacy which was then very much a subject of public interest, as well as of scientific curiosity and contradiction: *"De lapide, quem Bezoar appellant Arabes."* The proverbial charm of the number *three* would almost seem to have promoted the satisfactory course of the experiment in this case, and the apparently convincing proof of the efficacy of the famous Oriental panacea, for *"cæterum septima post ebibitum Napellum hora, Veneni tandem vi ab Antidoto extincta, omnia evanuere symptomata."* (!) It need hardly be added that the therapeutic reputation of the antidotal and all healing *bezoar* was more widely diffused by the publication of the results of these experiments; also that specimens of so celebrated a remedy were so keenly sought, and accordingly so high priced that "substitution" and "faking" of specimens of that concretion (of which the original appears to have been the gastric calculus of a Persian goat) soon became a profitable and vigorously cultivated department in the great system of commercial exchanges between Orient and Occident, which then gave employment to untold numbers of Mediterranean argosies—besides smuggling privateers and blackmailing claimants to levy of the original system of "tariff." The fact that its powers of physical salvation sufficed to neutralize the destructive properties of a reagent whose pagan terrors were enshrined in early Christian literature by St. Jerome himself, secured the permanent respect of both physicians and clerics of the period—of those who healed by faith and those who healed by drugs. And from this date begins a new era in the therapeutic history of our aconite.

That the therapeutic properties of this "Monkshood" plant present special features of the keenest interest to the clinical physician is a fact too familiar to every practitioner to require further demonstration. And in toxic doses it develops a characteristic syndrome of unique symptomatic and scientific importance and attractiveness. Such interest

extends to the general public as well as to the skilled devotee of the healing art; as any member of the community may, at some period of life, be exposed to its lethal powers—whether by accident or by design. Its special attractions necessarily, indeed, appeal in a series of faceted aspects to the best consideration of: the scientific physician, to whom it gives some of the most interesting clinical symptoms, while it may at any time afford urgent opportunities for the application of his best diagnostic judgment and therapeutic skill; the chemist, for the study of the physical properties and intimate constitution of its deadly active principle, the alkaloid aconitin; the physiologist, for the investigation of its specific influence on the neural, muscular, secretory, and circulatory systems, respectively; and the botanist, for the life history of a remarkable and interesting citizen of the vegetable kingdom, and the very peculiar—and artistically picturesque—conformation of its floral appendages. Even the latter—such is the *superstitious* stamping power of popular opinion and nomenclature—still may be sometimes found speaking or writing of *Aconitum Napellus* as *wolf's bane*, from the folklore fact that in bygone ages it was generally believed to be peculiarly fatal to wolves (other antique notions of corresponding type will be noticed in the sequel); but far more generally as *monkshood*, from the characteristic arrangement of its flowering leaves. Every medical student is soon made acquainted with the historic fact that the root of this plant—which contains the largest proportion of its deadly alkaloid—has before now been mistaken for that of horseradish; and, accordingly, served up to unsuspecting gourmands with deadly results. What has made this truly strange mistake so very famous in the annals of toxicology is, undoubtedly, the epoch-making incident which occurred some three centuries or so ago, on the occasion of a great banquet which was held in the city of Antwerp—when a large proportion of the guests were fatally poisoned by the occurrence of that deadly blunder. The cosmopolitan fame of this case undoubtedly rekindled the old reputation of aconite into a flame even more lurid than that of its classic celebrity. And the poetic allusions crowd in accordingly:

> All the world's Mortal to 'em then,
> And Wine is Aconite to men.
> —Cowley, *Anacreont.*, I, 41.

—and

> Despair, that aconite does prove,
> And certain death, to others' love.
> —Lansdowne, *To Mira.*

The unprecedented velocity of the progress of scientific chemistry during the past century included, among its myriads of important practical results, the isolation of the "active principle" of *Aconitum Napellus*—which proved to be a crystalline compound possessed of that distinctive feature of molecular architecture which received from chemists the descriptive appellation of "alkaloid." On account of its source it received the name of *aconitine*. This alkaloid is distinguished—among the many lethal compounds of its class—not only for its unequalled power of destroying human life, but for the unparalleled difficulty of tracing its presence in the body after death, when present in but small quantities, and not sought for till after complete absorption from the gastrointestinal surface has taken place. In his more advanced years Sir Robert Christison, the celebrated professor of medical jurisprudence in the University of Edinburgh, used frequently to relate to his class at lecture incidental illustrations of his subject matter derived from his own vast medicolegal experiences as an "expert witness" in such connection. It is, of course, well known that he was *the* great toxicological authority of Great Britain in his generation. Accordingly, his "skilled evidence" was frequently in requisition. On one of those occasions, when he was undergoing cross-examination regarding the possibility of satisfactorily recognizing poisonous substances when sought for in the dead body, he turned to the judge and proceeded to say: "My Lord, there is but one deadly agent of this kind which we cannot satisfactorily trace in the body after death; and that is——" when the judge sharply interrupted him with: "Stop, stop, please, Mr. Christison; it is much better that the public should not know it." Years afterward it was vividly recalled to the memory of many members of his then student class that Lamson, who was convicted and executed for the poisoning of his nephew with aconitin, was a member of the audience, and was exceptionally assiduous in note taking on one of those occasions, when Professor Christison was explaining to his class that *aconite* was the poison which he had been prevented from naming by the swift intervention of the court. The wretched man used the deadly weapon which he had, in his student days, been taught by the highest living authority to regard as "safe," as well as being so uniquely effective. But, as many of my readers will probably be able to remember, the aconitin of the Lamson case was identified by its physiological effects, which had become thoroughly familiar to experimentalists in the course of the interval that had elapsed since the completion of the curriculum of the unhappy Lamson. It is, perhaps, my duty to observe, in passing that this forward seven league stride in our knowledge of the previously unsolved mysteries of the most virulent of all known poisons is entirely due to the fruitful researches of the much abused vivisector. And I trust that my transatlantic brethren will regard as honest—and, accordingly, pardonable—the pride with which I call their attention to the fact that it was by our Dublin School of Medicine that the original inspiration and effective stimulus were supplied which led to the final plucking out of the heart of the mystery of the "queen mother of poisons." This item of scientific history is one of many existing specimens of the phenomenal results obtainable by a full development of the characteristically spasmodic Hibernian genius, when allowed a generation's growth under circumstances of encouragement without direct interference, and with prospect of free competition without "rights" of "ascendancy." It was the same generation which furnished the first legal conviction for poisoning by the previously elusive aconite that raised the Irish school of medicine to the foremost place among the nations of Christendom. It was the following generation which took to decoration of the "acquired" and "hereditary" professional characteristics by equestrian honors that

made the bearers of the latter a bye-word behind the professional scenes.

There is a very ample supply of evidence in existence to show that the deadly powers of aconite had both before, during, and subsequent to, the glorious centuries of Rome's literary and political supremacy, received studious attention—and very much of it—in Italy, the classical nursery of the skilled poisoner. At the same time, it should be borne in mind by the curious in this subject, that the term *aconitum* had, in classical and mediæval times, a connotation of prescientific vagueness; it was very evidently often used as a rather indefinitely generic term—intended to indicate *some* vegetable or preparation of peculiarly fatal properties. This characteristic vagueness in the use of the term is distinctly indicated in Vergil's employment of it in his patriotic appreciation of the climatic superiority of his native Italy, compared with the torrid attractions of the gorgeous Orient:

> At rabidæ tigres absunt, et sæva leonum
> Semina: nec miseros fallunt *aconita* legentes:
> —*Georg.* II, 151-2.

—the poisonous aconite herb being indigenous in Italy, a fact which was well known, and is definitely pointed out by Servius himself, who refers his inspired master's use of the term to "poetic art."

Other Roman poets have made copious references to the special uses of aconite which appear to have become almost familiar in the Eternal City's palmy days of luxury and vice. Thus that unimpeachable authority, Ovid:

> Illa potest vigilis flammas extinguere Vestæ
> Et rapere e templis, Inachi, sacra tuis;
> Et dare mista viro tritis *aconita* cicutis:
> Accepto Venerem munere si qua negat.
> —*Art. Amand.*, III, 463-6.

—and further:

> Imminet exitio vir conjugis, illa mariti;
> Lurida terribiles miscent *aconita* novercæ;
> Filius ante diem patris inquirit in annos.
> —*Metamorph.*, I, 146-8.

And the poetic license in the application of the term to which I have already referred is unmistakably indicated in these verses:

> Hujus in exitium miscet Medea, quod olim
> Attulerat secum Scythicis *aconiton* at oris.
> —*Metamorph.*, VII, 406-7.

The poetic fame of Medea, in the miraculous ways and means of both destruction and renovation, would readily suffice to establish the celebrity of her special lethal reagent. And, in this connection, it will be of interest to note how Sir Thomas Browne (of *Religio medici* celebrity), witchfinder as he was, explains away a "Vulgar Errour": "That Medea the famous Sorceresse could renue youth, and make old men young againe, was nothing else but that from the knowledge of simples shee had a receipt to make white haire black, and reduce old heads into the tincture of youth again." On the occasion of the formulation of this opinion, the introchemical attainments and instincts of the famous Norwich physician must have completely outshone the diabolico-miraculous theories which so frequently tinted his field of view!

The special criminal applications of the deadly powers of aconite, to which Ovid alluded in the above quotations, are referred to with appalling emphasis in the verses of Rome's most ruthless satirist, Juvenal. We there meet with a comment of fiery indignation on the current rewards of financial prosperity:

> Qui dedit ergo tribus patruis *aconita;* vehatur
> Pensilibus plumis, atque illinc despiciat nos:
> —*Sat.* I, 158-9.

—on the criminal capabilities of the contemporary human female unrestrained:

> Nos utinam vani! sed clamat Pontia, feci,
> Confiteor, puerisque meis *aconita* paravi,
> Quæ deprensa patent. . . .
> —*Sat.* VI, 638-640.

—on the superior depravity of the overlying social strata of the period:

> . . . sed nulla *aconita* bibuntur
> Fictilibus: tunc illa time, cum pocula sumes
> Gemmata, et lato Setinum ardebit in auro.
> —*Sat.* X, 25-7.

—and on the loftier flight of the contemporary ruthlessness of a living Nero than that of a mythical Orestes:

> . . . sed nec
> Electræ jugulo se polluit, aut Spartani
> Sanguine conjugii, nullis *aconita* propinquis
> Miscuit, in scena nunquam cantavit Orestes.
> —*Sat.* VII, 217-220.

It is hardly necessary to point out to the skilled reader that in the above series of quotations the term *aconitum* has been applied by the great satirist with highly elastic poetic license.

But even the gruesome poetic revelations and conceptions of Ovid and Juvenal are found to be surpassed in the biographic prose of Plutarch—representative, as this latter is, of the actual facts of human existence. For there we find written (North's version), in the concluding paragraph of the *Life of Marcus Crassus:* "But afterwards *Hyrode's* cruelty, and *Surena's* foul perjury and craft, were in the end justly revenged upon them both according to their deserts. For King *Hyrodes*, envying *Surena's* glory, put *Surena* to death. And *Hyrodes* fell into a disease that became a dropsie, after he had lost his son *Pacorus* who was slain in a battell by the Romans. *Phraates*, his second Son, thinking to set his father forwards gave him drink of the juyce of Aconitum. The dropsie received the poison, and the one drave the other out of *Hyrodes'* body, and set him on foot again. *Phraates* perceiving his father to amend upon it, to make short work, with his own hands strangled him." (The reader will have an opportunity, in the perusal of a subsequent quotation, of noticing the identity of one item of the elder Pliny's theory of toxicological therapeusis with that of Plutarch, as expressed in this somewhat bloodcurdling extract.)

The appearance of the remarkable "*helmet* flowers" combined—with the known destructive properties of the whole plant, throughout its various sections—to give to the "*monk's hood*" a conspicuously prominent position in the temple of ill fame, from even a very early date in the evolutionary progress of human knowledge. Accordingly the gorgeously imaginative ingenuity of classic times displayed a liberal expenditure of its powers and accomplishments in its accounts of the original production, the physical peculiarities, and the antidotal —or *antipathetic*—history of aconite. In the grand

old pagan "Encyclopædia of Natural History" which was compiled by the ever interesting Caius Plinius Secundus, we are told (in the version of Philemon Holland, *Doctor of Physicke*) how "the poets haue feined a tale, that this herb should be ingendered first of the fome that the dog *Cerberus* let fall vpon the ground, frothing so as he did at the mouth for anger when *Hercules* plukt him out of hell: and therefore it is forsooth, that about Heraclea in Pontus (wher is to be seen that hole which leadeth into hel) there groweth Aconit in great plenty." And this same uniquely interesting authority informs all readers whom it may concern, or interest, that "we know there is no poison in the world so quicke in operation as it, insomuch as if the shap or nature of any liuing creature of female sex be but touched therewith, it will not liue after it one day to an end. This was that poison wherewith *Calphurnius Bestia* killed two of his wiues lying asleep by his side, as appeareth by that challenge and declaration which M. *Cæcilius* his accuser framed against him. And hereupon it was, that in the end of his accusatory inuectiue he concluded with this bitter speech, That his wiues died vpon his finger."

This latter peculiar manifestation of its malignant powers gave aconite the additional soubriquet of *Theliphonon* ("female-bane," *women's bane*) by which it was sometimes distinctively indicated. The root was supposed by some of the ancient botanists to be "like vnto a sea crabfish: and therfore some haue named it *Cammaron.*" And we are further informed: "for that the root doth turn and crook inward in manner of a scorpions taile, there be that giue it the name *Scorpion.* There wanted not others who chose rather to call it *Myoctonon,* because with the very sent it is able to kill mice and rats a great way off." Regarding the apellation by which it is generally known to modern botanists, we are told that: "It groweth naturally vpon bare and naked rocks, which the Greeks cal Aconas; which is the reason (as some haue said) why it was named *Aconitum.* . . . Yet there be others who assigne another cause of that denomination, to wit, for that it is as forcible and as speedy in working the death of those whom it toucheth as the hard-stone or rag in turning or wearing the edge of any yron toole, for no sooner commeth it neere vnto the body and is applied vnto it, but the quicke operation is sensibly found." Yet another etymological opinion—as if in illustrative demonstration of the hopeless irreconcilability of doctorial dicta, in each and all of the varied departments of the tangled domain of human knowledge: we find Theophrastus, that other colossal authority of those classic ages—regarding the opinions vegetable of Pagan times "which we are wont to call ancient"—deriving the appellation of his aconite "from Anconas, a certain towne, neer to which it groweth abundantly." However, the inspired apostle of the creed and cult of Venus is found unquestioningly accepting the authenticity of the derivation first (of the above) mentioned by Pliny:

> Quæ, quia nascuntur dura vivacia caute,
> Agrestes *aconita* vocant. . . .
> —Ovid, *Metamorph.*, VII. 419-420.

The word has also been derived from ἀκή (javelin, dart, arrow), because some barbarous nations employed the juice to poison the points of their arrows and spears; others have referred the source to ἀκοντίζω (ἀκοντίζειν), to hit or strike) because it hastens death so rapidly. In this connection the words of Xenophon possess a definite interest: οὐδὲ γὰρ τοξεύειν, οὐδὲ ἀκοντίζειν ἄνθρωπον ἐπετρέπομεν ὑμῖν. And Pena, who discusses this derivation with special keenness, expresses the opinion that "Aptior fuerit Nomenclatura interpretatio, si eam ab herbæ succo, vel radice, quibus quasi cote spicula a venatoribus affricta & subacta, cælerius subirent, & perniciem adferrent, quam si a cautibus, aut a pagi cognomine deduces"; but he, nevertheless, does not neglect to point out that "possit etiam ἀπὸ τοῦ ἀκοντίζειν deduci, quemadmodum τόξευον ἀπὸ τοῦ τοξεύειν et non a taxo."

That a variety of poisonous herbs were indiscriminately indicated in ancient times by the term "aconitum" must, I think, be now admitted, in the light of the evidence before us. The name conveyed hardly anything more definite to the popular intelligence than a deadly herbal poison. The celebrated author of the *Paradisus in Sole* observes, too, of the nomenclature of "scientific" botanists: "But the name of *Aconitum* was referred to many sorts of poysons, and poysonous herbes, one much differing in face, though not quality, from another, as hath been shewed before in the white Ellebor and others. . . ." He himself enumerates nine varieties of *Aconitum,* and adds: "I call all these kinds Woolfes banes and Helmet flowers, not onely for a distinction from the other sorts that follow (for all these are in face and forme of growing, and in leaves, rootes, flowers and seede one, not much differing one from another) but to show you that it is even *Dioscorides* his distinction, who maketh this his *Aconitum alterum,* which he saith was called *Lycoctonum* and *Cynoctonum,* although his former *Aconitum* called *Pardalianches* did kill Woolves as this, and that such different herbes should not goe in English under one common name of Woolfes bane, whereby it should bee hard to understand in the naming of them what kind is meant." And in his next chapter Parkinson deals with "*Aconitum Pardalianches sive Thora,*" leopard's bane, whereof he describes three varieties.

(To be continued.)

Correspondence.

LETTER FROM LONDON.

A Proposed Memorial of King Edward.—Free Diphtheria Antitoxine.—A Case of No Cure No Pay.

London, *September 1, 1910.*

A great movement has been started in London for founding a memorial of the late King Edward. It is headed by the lord mayor of London, who has already formed a large committee of prominent men representing all sections of the community. Among others the president of the Royal College of Physicians of London and of the Royal College of Surgeons of England have been appointed, while individual members of the medical profession, notably Sir Frederick Treves and Sir W. J. Collens, have also accepted the invitation to join. It has been suggested that, as the late king was keenly in-

terested in medical charities, the memorial might take the form of some special hospital or sanatorium. Another suggestion is that at each London hospital a ward should be named after King Edward. This would be a very suitable form of memorial, and the expenditure entailed would be very little. Each hospital would receive a stated sum in addition.

Another suggestion is to found a gallery for the fine collection of busts in the Royal College of Surgeons, Lincoln's Inn Fields.

Another suggestion is rather widely extravagant. It is proposed that by way of a memorial the whole of the medical, surgical, and dental practices of the country shall be nationalized. Other suggestions are to provide for the temporary housing of persons mentally distressed, for free legal advice to the poor, and to raise a fund out of which temporary loans would be made to the needy and poor. To erect and endow a sanatorium of good size appears to be one of the best suggestions yet put forth.

The Local Government Board have issued a circular to local authorities stating that they have made an order sanctioning the provision by the councils of county boroughs, urban districts, and rural districts throughout England and Wales of a temporary supply of diphtheria antitoxine and of medical attendance in connection therewith. Such councils are to consider at an early date with their medical officers of health what arrangements should be made for the provision of antitoxine and for its use, both as a prophylactic and as a curative. It is pointed out that the free provision of diphtheria antitoxine authorized by the order is not to be regarded as a substitute for removal to hospital of a patient suffering from diphtheria, or as implying that the patient to whom the antitoxine has been administered may properly be retained for treatment at home, unless means are available for his efficient isolation to the satisfaction of the medical officer of health, but that, on the other hand, the prompt administration of antitoxine before the patient is removed to a hospital may, especially if delay in removal is inevitable, go far toward preventing the attack of diphtheria from being fatal. It is suggested further that the arrangements which the council may make for the supply of diphtheria antitoxine should be brought to the knowledge of all medical practitioners practising within their jurisdiction, and that in any circular letter which the council send out to medical practitioners emphasis should be laid on the importance of prompt treatment by antitoxine and on the saving of life which may thereby be effected.

A very interesting case was tried recently at the Basingstoke County Court. It was an action brought by a widow against a man named C. H. Stevens for the payment of £10, which he was alleged to have undertaken to pay if he did not cure her husband. This patient, after seeing an advertisement to the effect that the defendant offered £10 to any patient whose cure he undertook if he failed to effect it, got into communication with him and received a circular stating that the terms were "no cure no pay." This was followed by a letter, consequent in which the patient paid over to the defendant £2. He began the treatment and pursued it for some time, but a year later died, the cause of death being certified to be pulmonary tuberculosis and heart failure. By way of defense to the action the defendant endeavored to make out that the words employed in his communications did not amount to a contract. In the course of cross examination he stated that he was an unregistered lung specialist and had studied consumption and its cure for fifteen years. He had not studied in hospitals, but under doctors who were fully qualified men. His studies consisted in giving the cure to consumptive patients and getting medical men to watch the cases while their recoveries were being brought about. On the conclusion of the evidence the judge said that the case was one of grave importance to the general public. A great number of quack remedies had been from time to time put forward, advertised, and pushed by people who in the majority of cases were totally unqualified, who had no medical knowledge, and who in a great number of cases had been proved to be simply imposters trading upon the sad conditions which were brought about by the presence of this disease in any particular family or district. The judge gave a verdict for the plaintiff. On application for leave to appeal, the judge refused it and said: "I think this is an intentional and well considered fraud. It is a scandalous thing that poor people should be imposed upon and led to part with their money and to hope that those dear to them will be cured by those processes which are nothing but quack remedies and have not the slightest value of any kind."

Therapeutical Notes.

Dental Formulæ.—In a supplement to the *Medizinische Klinik* for July 31, 1910, entitled "What Must the General Practitioner Know of Dental Diseases?" the author, Dr. Williger, of Berlin, gives the following formulæ:

For a Mouth Wash.

I.

℞ Thymol, ...gr. xxx;
Oil of peppermint, ...mxv;
Alcohol. .....ʒvii.

M. et Sig.: Ten to fifteen drops in a wine glassful of water for use as a mouth wash.

II.

℞ Solution of hydrogen dioxide.

Sig.: One teaspoonful in a glassful of water.

For Caustic Applications.

I.

℞ Zinc chloride solution, ...8 per cent.

II.

℞ Lactic acid solution, ...80 per cent.

The first prescription is for use in the treatment of ulcerative stomatitis and the second, when made with a cream by the addition of iodoform, is recommended for the treatment of tuberculous ulcers of the mouth.

Dental Anæsthetic.—Heys (*British Dental Journal*) recommends the following solution for use as a dental obtundent:

℞ Cocaine hydrochloride, ...gr. ixss;
Sodium chloride, ...gr. viii;
Solution of adrenalin chloride (1 in 1,000),.mxxviii;
Sterilized water, ...ʒii.

M.

NEW YORK MEDICAL JOURNAL
INCORPORATING THE
Philadelphia Medical Journal
and The Medical News.

A Weekly Review of Medicine.

Edited by
FRANK P. FOSTER, M. D.

Address all business communications to

A. R. ELLIOTT PUBLISHING COMPANY,
Publishers.

66 West Broadway, New York.

Cable Address: Medjour, New York.

SUBSCRIPTION PRICE:

Under Domestic Postage Rates, $5; under Foreign Postage Rate, $7; single copies, fifteen cents.

Remittances should be made by New York Exchange or post office or express money order, payable to the A. R. Elliott Publishing Co., or by registered mail, as the publishers are not responsible for money sent by unregistered mail.

Entered at the Post Office at New York and admitted for transportation through the mail as second-class matter.

NEW YORK, SATURDAY, SEPTEMBER 17, 1910.

SALE OF EHRLICH'S "606."

Our readers will be interested to learn that we have received a communication from Professor Paul Ehrlich, of Frankfort, informing us that the dioxydiamidoarsenobenzol preparation, termed by Ehrlich "606," will be for sale in Germany on November 1st, through Farbwerke Hoechst., and in the United States and Canada by the same date through Victor Koechl and Company, of New York.

We again direct our readers' attention to the inventor's warning to follow implicitly his instructions as to dose and use. The remedy should not be used in every case of syphilis. In the instructions which accompany every tube of "606," Ehrlich states, that it should only be used in syphilitics who have no organic lesions and who show no mercurial effects. We have spoken of "606" editorially in our issues of August 20th, 27th, and September 3d. A very explicit description of the method of administration and of the results produced is to be found on page 452 of our issue of September 3d, by Dr. Wilhelm Wechselmann, of Berlin, whose article is the only authentic publication based on actual clinical experience which has so far appeared in the medical journals of this continent.

THE HISTORY OF MEDICINE.

Only lately has the history of medicine, thanks to such men as Sprengel, Littré, Häser, Hirsch, Petersen, Pagel, Adams, Payne, and Neuburger, come to its own; societies for its promulgation have been founded, periodicals are published, and teachers have been appointed in many universities. One of the best books on the subject, if not the best, has very recently appeared in English, published by the Oxford University Press. It is the work of Max Neuburger, professor of the history of medicine in the University of Vienna, and very carefully and idiomatically has it been translated by Ernest Playfair. It is such a concise, well written, brilliant book that we think our readers will thank us if we try to give them a short synopsis of the first volume, which lies before us.

The book begins with primitive medicine, a reconstruction of which can be attempted from the remains of a prehistoric past and from a few survivals in the speech and customs of the present medical folklore; a light is further cast upon the medicine of primitive men by the conditions existing at present in those races which lead an existence analogous to that of primitive men. The first civilization built up by men appears to have been established in Mesopotamia, the nursery if not actually the cradle of all culture. Here the seed of civilization was sown about 4,000 B. C. by the Sumerians, a people who made a previously inhospitable land hospitable and fruitful by building canals, who laid the foundation of the ancient Oriental cosmogony, religion, and statecraft, who invented pictorial writing, and who fostered the study of astronomy and natural science, the arts and crafts. The Babylonians and Assyrians, the conquerors of Mesopotamia, borrowed from the Sumerians the elements of morals, learning, and the arts, and developed them further.

Parallel with the history of these nations runs that of Egypt, which may be said to have exercised a powerful influence as a pioneer upon the social hygiene of Judah, upon the beginnings of medicine in Greece (Egypt was opened to the foreigners in the seventh century B. C.), and through those upon the development of medicine.

The victory of the great Cyrus laid the foundation of an empire, extending from the Indus to the Mediterranean, including Babylon and Egypt; but the importance of Persia lies in its geographical rôle, in the intercourse between east and west.

Of the medicine of the Jews we know very little. The teachings of Egypt and Babylonia were well assimilated by this small race, and their only book, the Bible, sheds light upon medical conditions so far as ritual observance and religious law of hygiene and prophylaxis are concerned. There can be no doubt that the hygiene of the Pentateuch found its model in the priestly hygiene of the Egyptians. At a later period in the medicine of the Talmud (second to sixth century), originality and initiative are evident, but foreign influences are dominant, Hellenic,

older Egyptian, Babylonian, and Persian. The Talmud deals with medicine for the most part only so far as ritual and civic and criminal law are thereby affected. But, in view of the importance of the Jewish physicians in the Middle Ages, it is conceivable that much may have been added to medicine in general which originated from the encyclopædia of the Talmud.

The medicine of the Indians, if it does not equal the best achievements of their race, at least nearly approaches them, and, thanks to the inexhaustible fount of Sanskrit literature, its development can be traced from its primæval origin in empiricism and theurgy to its height as a completed system of learning. Indian medicine was in possession of an imposing treasure of empirical knowledge and technical achievement. Through the instrumentality of the Arabs and through the conquests of Alexander the Great, many of the Indian discoveries were carried far into the west, while it is to the Indian influences that all Asia owes more or less of her medical lore.

The medicine of the Chinese presents the same picture to-day as thousands of years ago; it has added nothing to our knowledge. The Japanese received their knowledge of medicine from China through Corea, but Japan emancipated itself as early as in the sixteenth century, and now it marches in the front rank.

These nations prepared the advent of the medicine of the Greeks with Hippocrates and that of the Romans with Galen (also a Greek), in whom the medical art of antiquity found at once its fullest and final expression. But the age of the great physician of Pergamos coincided with the beginning of the period of decadence, which is first heralded in the literature of the third century. The successor to proud Rome was Byzantium, which remained a stronghold of culture until it in its turn went down before the vigor of an eastern race; but it added nothing new to the lore of medicine.

At the time when Christianity appeared in Rome it had already found root in Syria, that country of conglomeration of many nations, which translated Greek medicine to the east, especially to Arabia, which then became prominent, taking up with Greek medicine all the acquisitions of the previous ages, blending Greek elements with Oriental. In the persons of Arabian physicians the east was again the teacher of the west. Grateful for all they owed to the Nestorians, the Moslems gladly threw open to the Christians of the west the portals of scientific medicine and granted them access to the intellectual treasures of antiquity, if often in fantastic garb. But Arabian medicine, as a preparatory and transitory phenomenon, could not withstand the stress of the times; the gradually increasing reaction against Islam constitutes the main feature of medical history in the later Middle Ages. This, in general lines, is recounted in the brilliant book. Added to the several chapters are biographical sketches and synopses of literature. With Pagel's *Zeittafeln*—we still hope to see them published in an English edition—Neuburger's book is a splendid repository of the history of medicine.

METHODS OF DISSEMINATION OF TYPHOID FEVER.

Professional opinion as to the means of transmission of typhoid fever has undergone much modification of late years, and inductive reasoning on inadequate data and with insufficient digestion of facts and theories has caused an oscillation, not to say vacillation, of views which is much to be regretted. Limiting ourselves to the last fifty years, we may distinguish three stages in the conception of the means of dissemination of the disease. In the first stage, the fever was regarded as noncontagious, and, further than the very vague recognition of the fact that there must have been some *contagium vivum* which was somehow widely distributed, there was no prevalent conception as to the exact means of distribution or any expectation that such distribution could be prevented. Next, with the discovery of the bacillus, and even before, came the conception of typhoid fever as mainly a water borne disease. In the third period, in which we still remain, the tendency is to lay special stress on one or more of many means of conveyance, such as ice, flies, personal contact, milk, and other foods, recovered bacillus carriers, etc. It is of the utmost importance to remember the tendency of humanity to pendulumlike movements of opinion, the danger of generalizing from individual experience, the fact that the typhoid bacillus is rarely discoverable in a medium of conveyance, and the reflection that we are too prone to condemn the knowledge of yesterday and to be cock sure of the knowledge of to-day.

If we approach the subject in a properly humble frame of mind, we must acknowledge that our criticism of the ancient clinicians for not recognizing typhoid at all is a compliment, not so much to our own powers of observation as to their attainments under adverse circumstances along various other lines of professional skill. We must also admit that, though contact infection now seems indubitable when typhoid fever has become rather an infrequent disease and when water and other routes can often be positively excluded, it could not have been demonstrated unless by the merest chance, when the disease was ten or twenty times as common, before water could be tested or was common-

ly marketed in ways such as practically to eliminate this route, and before other means of exclusion were available. Contact infection is decidedly uncommon, even relatively to the present reduced incidence, and, from the standpoint of the recent past, the statement of an acute observer (in 1887) that in thirty years he had never seen a case that was even apparently of contagious origin, was practically correct. So, too, the vague notion as to the means by which typhoid fever was actually spread was far better than the notion that yellow fever was contracted from fomites or that malaria, as its name implies, was due to some exhalation from marshes. Even to-day, in relation to typhoid fever itself, we can draw the moral of being noncommittal and unbiased until experiment and experience agree and afford a basis for positive assertions.

The conception of the second period of typhoid fever as a water borne disease, was to some extent incorrect, not so much essentially as because it implied the idea of typhoid fever as an intrinsically intestinal disease and because, in laying stress on the fæces as the original source of infection, it tended to ignore the urine and various other discharges, and because it failed to allow for the fact that such infectious matter might give rise to a fresh case quite directly and, secondarily, by entering other media than a water supply. The danger to-day is not that we shall ignore these other media of infection, but that, in the enthusiasm of their demonstration, we shall forget that, in a great epidemic or even a moderate endemic, the water supply should still be the central subject of suspicion. At present, an important basis for the attack on the conception of typhoid fever as an essentially water borne disease is the failure of the city of Washington to secure the expected result from its comparatively new system of water works. The keen disappointment felt that a before and after picture could not be made in this case has led to the expression of various extreme views. Some have condemned the construction of the works, others the entire system of infiltration, while still others have drawn the conclusion that typhoid fever should not be considered as, in any specific sense, a water borne disease at all. Even in the temperate articles published on the subject the reader might, if he were not critical, get one of these ideas by apparent implication.

Let us not overlook the facts that every massive epidemic which has been carefully studied has been proved almost beyond doubt to have been due to infection of a water supply, and that, with extremely few exceptions, every city that has either avoided a highly polluted stream or has introduced almost any form of water filtration has experienced a sudden drop in its typhoid fever incidence. In Paris typhoid fever has become rarer than diabetes, ecchinococcus disease, or various other affections in encountering which we experience the same pride and pleasure which the naturalist does in finding a rare bug or fish. Yet the only systematic attack on the disease, barring ordinary cleanliness of a degree little if any greater than characterizes our own principal cities, is with regard to the water supply. It ought not to be necessary to point out that the water supply of a particular city is not the only water from which its residents may derive typhoid infection. The seasonal incidence of typhoid alone almost justifies the adoption of the term picnic typhoid or vacation typhoid. We have known three cases from one small picnic, apparently due to a single well, but, of course, statistically charged to the city in which they occurred. Almost every city has typhoid cases deliberately or accidentally brought in for treatment, after development from an extraneous source. Civilized man travels extensively, even the poorest for short distances. Niagara Falls, which has a high typhoid fever rate in spite of the fact that its population should largely have been immunized by previous attacks, drinks diluted sewage from Buffalo and the Tonawandas. The expression " a drop in a bucket" is pretty literally applicable to the Niagara Falls water supply, for, by actual mathematical computation, it contains something more than a centigramme of human urine and something over a milligramme of human fæces to the quart. About one person in a hundred of the entire population of the United States visits Niagara Falls annually, and most of them drink at least a quart of that water. Probably no other one place of interest in the country, outside of the large cities, is visited by so many pleasure seekers, but it is only one of many resorts having more than doubtful water supplies which attract travelers literally by the million. Doubtless this fact explains why the drop in typhoid mortality—which is a much more accurate index than the total reported incidence—after the installation of filters by American cities has not been so marked as in Europe, where the movement has been much wider spread and where suburban water supplies are also fairly carefully guarded, not to mention the fact that our people travel more extensively and drink water more copiously than the Europeans.

Thus, there is no need to abandon the conception of typhoid as a water borne disease. We do not for a moment question the importance of other factors which will loom bigger and bigger as our water supplies are more generally protected, but, for the present, with all due allowance for flies,

carriers, contact infection, etc., we feel that, barring peculiar local conditions, as in a camp with good water and carelessly constructed latrines, much dust, poor surface drainage, and improperly screened kitchens, the main point of attack must continue to be the water supply.

Obituary.

JAMES NEVINS HYDE, M. D.,
of Chicago.

Dr. Hyde died on Tuesday, September 6th, at the age of seventy years. For many years he had been a prominent dermatologist, and he was the author of an excellent treatise on diseases of the skin. As a man, he was warm hearted and attractive. He was a graduate of the medical department of the University of Pennsylvania, of the class of 1863, and at the time of his death he held the chair of dermatology in Rush Medical College, of Chicago.

ELY VAN DE WARKER, M. D.,
of Syracuse, N. Y.

Dr. Ely Van de Warker died Tuesday, September 6th, at the age of sixty-nine years. He was a graduate of the Albany Medical College, of the class of 1863. He was for many years one of the leading gynæcologists of the country, and of late years he had shown great interest in the subject of general education. He was a man of imposing presence and attractive personality.

News Items.

Mississippi Valley Medical Association.—The Mississippi Valley Medical Association held its thirty-sixth annual meeting in Detroit, Mich., on September 13th, 14th, and 15th.

Pittsburgh's Floating Hospital for Infants.—The Women's Club of Pittsburgh has chartered the steamer *Sunshine* to be used as a floating hospital for infants. The steamer went into commission on September 14th.

Women Physicians for City Hospital.—Women practitioners in St. Louis city and county have been invited by the Hospital Board under the new hospital law to apply for positions on the visiting staffs of the City Hospital and other municipal institutions.

University College of Medicine at Richmond, Va.—Ground was broken at Richmond, Va., at Twelfth and Cary streets on September 3d for the foundation of the new University College of Medicine building which will replace the one destroyed by fire in January.

Medical Department of the Cincinnati University.—The medical department of the Cincinnati University will open on September 28th with several new professors, among them Dr. Martin Fischer, who will have charge of the physiology department. In the department of practical anatomy many improvements have been made in the laboratory, and Professor H. Knower, who taught anatomy for ten years at Johns Hopkins Medical College, will be in charge. An entirely new laboratory for the teaching of pharmacology will be ready for use when the college opens. Dr. Julius Eichberg will be in charge.

Tuberculosis among the Cattle at the Maine State Fair.—Under the direction of United States Inspector William Goff, of Lewiston, tuberculous cattle were killed at the Maine State Fair to demonstrate the ravages of the disease. The animals were dissected. Four cows were killed in different stages of the disease, and in each the diagnosis of the symptoms was correct.

Smallpox on S. S. President Lincoln.—The illness from smallpox of a steerage passenger, a child of two and a half years, detained the Hamburg-American liner *President Lincoln* when she reached Quarantine on September 7th. Helen Golisczk, the victim, who is of American birth, was removed to Swinburne Island. The *President Lincoln* brought a total of 1,874 passengers, including 675 saloon, 469 second cabin, and 730 in the steerage. As there were no other patients discovered, the ship was cleared the following morning.

Gifts and Bequests to Charities.—Announcement has been made of a $500,000 gift to the Evanston, Ill., Hospital Association by George W. Patten, brother of James A. Patten. The money is to be used by the hospital as an endowment fund to be known as the Agnes and Louisa Patten fund.

Mrs. Margaret E. Gray gave $50,000 to the New York Academy of Medicine for establishing the Landon Carter Gray Memorial Fund for the library in memory of her husband, who died about ten years ago.

University Appointments.—Dr. Frederick P. Gay, of the Harvard Medical School, has been appointed head of the department of pathology of the University of California. Dr. H. B. Graham has been appointed assistant professor of hygiene at the University of California. Dr. F. L. Haley, of Hoosic Falls, N. Y., has been made professor of physiological chemistry and bacteriology in the medical department of the University of Alabama; other additions to the faculty are: Dr. James F. Harrison, professor of chemistry and materia medica; Dr. M. Toulmin Gaines, associate professor of pathology and histology, and Dr. William H. Oates, associate professor of therapeutics.

The Health of Philadelphia.—During the week ending August 27, 1910, the following cases of and deaths from transmissible diseases were reported to the Department of Health of the city of Philadelphia: Typhoid fever, 52 cases, 4 deaths; scarlet fever, 12 cases, 0 deaths; chickenpox, 7 cases, 0 deaths; diphtheria, 39 cases, 3 deaths; measles, 34 cases, 4 deaths; whooping cough, 65 cases, 17 deaths; pulmonary tuberculosis, 125 cases, 54 deaths; pneumonia, 12 cases, 15 deaths; mumps, 1 case; infantile paralysis, 8 cases, 0 deaths. There were 4 deaths from tuberculosis other than that of the lungs, 1 from dysentery, 1 from cholera morbus, and 69 from diarrhœal diseases under two years of age. There were 19 stillbirths; 13 males and 6 females. The deaths from all causes numbered 446.

New York's Census.—The population of the city of New York is announced officially at 4,766,883, an increase during the last decade of 38.7 per cent. During the previous decade the increase was 37.1 per cent. The largest increase of the population was in the borough of the Bronx, which has enlarged 114.9 per cent. In Brooklyn the increase was 40.1 per cent., and in Manhattan 26 per cent. The following are the figures for the last three counts:

Population.	1910.	1900.	1890.
New York City	4,766,883	3,437,202	2,507,414
Manhattan Borough	2,331,542	1,850,093	1,441,216
Bronx Borough	430,980	200,507	88,908
Brooklyn Borough	1,634,351	1,166,582	838,547
Richmond Borough	85,969	67,021	51,693
Queens Borough	284,041	152,999	87,050

Vital Statistics of New York.—During the week ending September 3, 1910, the deaths from all causes reported to the Department of Health of the City of New York numbered 1,267, corresponding to an annual death rate of 14.03 in a thousand of population, as compared with a rate of 14.31 for the corresponding week in 1909. The annual death rate for the week in each of the five boroughs was as follows: Manhattan, 14.28; the Bronx, 16.50; Brooklyn, 12.44; Queens, 14.36; Richmond, 16.45. There were 135 stillbirths. The deaths of children under five years of age numbered 495, of whom 365 were under one year of age. The deaths from diarrhœal diseases under five years of age numbered 230; over five years of age, 241. There were 11 deaths from suicide, 6 from homicide, and 55 due to accidents.

Expenses of the Department of Health of the City of New York.—Dr. Lederle, commissioner of the Department of Health, has submitted to the Board of Estimate the amount of money required for his department during 1911. He asked for $4,076,578, which is an increase of $1,328,855 over the budget allowance of $2,747,723. The largest increase is for hospitals, amounting to $486,000.

The Health of Buffalo.—During the month of August, 1910, the following cases of and deaths from transmissible diseases were reported to the Department of Health of the City of Buffalo: Typhoid fever, 35 cases, 11 deaths; whooping cough, 533 cases, 21 deaths; scarlet fever, 86 cases, 6 deaths; measles, 22 cases, 4 deaths; diphtheria, 61 cases, 7 deaths; chickenpox, 9 cases; tuberculosis, 95 cases, 30 deaths; pneumonia, 26 deaths; mumps, 6 cases, 0 deaths. Total number of cases reported, 865. Total number of deaths, 640, as compared with 525 for the same month last year.

The Health of Chicago.—During the week ending September 3, 1910, the following new cases of and deaths from transmissible diseases were reported to the Department of Health of Chicago: Typhoid fever, 80 cases, 6 deaths; measles, 25 cases, 0 deaths; whooping cough, 34 cases, 3 deaths; scarlet fever, 55 cases, 4 deaths; diphtheria, 98 cases, 13 deaths; tuberculosis, 108 cases, 66 deaths; pneumonia, 7 cases, 41 deaths. Total number of cases reported 416, as compared with 420 for the preceding week. The deaths under two years of age from diarrhœal diseases numbered 136. There were 31 deaths from congenital defects and accidents. The total deaths of children under five years of age numbered 222, of whom 154 were under one year of age. The total deaths from all causes, exclusive of stillbirths, numbered 602, as compared with 639 for the preceding week.

Protection Against Cholera.—Orders have been given through the Public Health and Marine Hospital Service to the American consuls at Marseilles, Havre, Cherbourg, Genoa, Palermo, Naples, and Messina to detain steerage passengers from all parts of Russia and their baggage for five days for disinfection and observation before they are allowed to take ships for the United States. The guard at ports of entry in the United States is being doubled. Officers of the service have been dispatched to New York and Boston to consult with the quarantine officers there for special measures. Special instructions for the examination of vessels from ports suspected of infection or carrying passengers from infected districts have been sent to every quarantine officer in the service. It has been reported from Naples that the cholera situation there is growing more serious. There were twelve new cases and eight deaths from the disease in that city on September 12th.

University of Buffalo.—Several changes of note have been made in the faculty of the medical department of the University of Buffalo for the coming year, according to the new catalogue just issued. Dr. Matthew D. Mann has resigned from the chair of obstetrics on account of his age, and is succeeded by Dr. Francis C. Goldsborough. Dr. Mann also tendered his resignation as dean of the faculty, but reconsidered this action, and consented to continue as honorary dean, with the title of emeritus professor of obstetrics and gynæcology. Dr. E. A. Bowermann has been chosen lecturer in hygiene and sanitation, filling the place recently vacated by Dr. Robert F. Sheehan, Jr. Dr. Sheehan was appointed about a year ago to fill the place vacated by Dr. Hopkins. Dr. Grover W. Wende has been made professor of dermatology in the place of his brother, the late Dr. Ernest Wende. The department is making an improvement in the form of a wing that is being built onto the rear of the medical school to accommodate new chemical and research laboratories, at a cost of $18,000. It is expected that the new wing will be completed and ready for occupancy when the fall term opens. The dispensary facilities, too, have been enlarged by the removal of the Good Samaritan Free Dispensary to the west wing of the college building. This will enable the department to handle a greater number of patients, which have increased in recent years to such an extent as to demand an immediate enlargement of facilities. The officials appointed to preside over the new dispensary, which is now located at No. 24 High Street, are Dr. Thomas B. Carpenter, president, and Dr. Walter S. Goodale, secretary and treasurer.

New Hospital for Chicago.—Construction work on the Iroquois Memorial Hospital has been begun, and the contract calls for the completion of the building by December 30th, the anniversary of the Iroquois Theatre fire, in which nearly six hundred persons lost their lives. The building is to be put up and equipped by the Iroquois Memorial Association and then turned over to the city of Chicago, to be operated as an emergency hospital, receiving emergency cases and victims of accidents in the downtown district. The hospital will cost $30,000.

Medical Society of the Missouri Valley.—The annual meeting of the society was held at Council Bluffs. The oration in surgery was given by Dr. Norvelle Wallace Sharpe, of St. Louis, who presented a lecture on fractures of the femur, illustrated by skiagraphs and drawings. Dr. George Howard Hoxie, of Kansas City, delivered the address in medicine, his subject was arthritis. The presidential address by Dr. A. B. Somers, comprised a review of the progress in obstetrics. The society placed itself on record as endorsing the Owen Public Health bill, as well as condemning the use of all chemical preservatives in foodstuffs. A change in the by-laws was effected, giving Omaha and Council Bluffs the annual meeting, alternately. Officers elected: President, Dr. Donald Macrae, Council Bluffs; first vice-president, Dr. J. M. Bell, St. Joseph; second vice-president, Dr. J. M. Banister, Omaha; treasurer, Dr. Thomas B. Lacey, Council Bluffs; secretary, Dr. Charles Wood Fassett, St. Joseph. St. Joseph was selected as the place for next meeting, March, 1911.

International Tuberculosis Congress, 1911.—The next International Tuberculosis Congress will be held in Rome in 1911, from September 24th to 30th. This gathering, which meets every three years, and was last held in Washington, D. C., in 1908, will be under the direct patronage of the king and queen of Italy. The secretary general is Professor Vittorio Ascoli, and the president Professor Guido Baccelli. It is expected that an American Committee of One Hundred will be appointed as the official body representing the United States. Estimating on the present rate of increase, the National Association for the Study and Prevention of Tuberculosis announces that the American Committee will be able to give a most flattering report at the congress. They will be able to announce that the number of tuberculosis agencies in this country has tripled in the three years since the last International Congress, and that more than twice as much money is being spent in the fight against consumption by private societies and institutions, and also that the appropriations for tuberculosis work by federal, State, municipal, and county authorities have quadrupled. The Congress at Rome will be in three sections: On ætiology and causes of tuberculosis; on pathology and therapeutics, both medical and surgical; and on the social defence against tuberculosis. The namse of the presidents of these sections will be announced in the near future.

The Following State and National Medical Societies will meet in September or October:

American Academy of Ophthalmology and Otolaryngology, Cincinnati, September 19th to 21st.

Nevada State Medical Association, Lake Tahoe, Cal., September 19th to 21st.

American Association of Obstetricians and Gynecologists, Syracuse, September 20th to 22nd.

Wyoming State Medical Society, Casper, September 27th.

Michigan State Medical Society, Bay City, September 28th and 29th.

American Röntgen Ray Association, Detroit, September 28th to October 1st.

Medical Society of the State of Pennsylvania, Pittsburg, October 3rd to 6th.

Utah State Medical Association, Salt Lake City, October 3rd and 4th.

Minnesota State Medical Association, Minneapolis, October 6th and 7th.

Medical Association of the Southwest, Wichita, Kan., October 11th and 12th.

Vermont State Medical Society, St. Albans, October 13th and 14th.

American Association of Railway Surgeons, Chicago, October 19th to 21st.

Medical Society of Virginia, Norfolk, October 25th to 28th.

Pith of Current Literature.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

September 10, 1910.

1. Lichen Planus Sclerosus et Atrophicus (Hallopeau). A Report of Six Cases (Five New) With a Review of the Literature, By Oliver S. Ormsby.
2. Report of a Case of Intussusception, By A. L. Sharber.
3. Diagnosis of Leprosy, By Isadore Dyer and Ralph Hopkins.
4. Significance of Œdema of the Soft Palate, By Lewis S. Somers.
5. Ultimate Results in Treatment of Pulmonary Tuberculosis with Mercury Succinamide, By H. J. Hartz.
6. Plastic Surgery of the Pelvic Structures, By Henry O. Marcy.
7. Pathological Relationship of Ulcer and Carcinoma of the Alimentary Canal, By Louis Blanchard Wilson and Byrd Charles Willis.
8. An Ideal Operation for Total Prolapse of the Uterus, By Samuel Wyllis Bandler.
9. The Bronchoscopic Treatment of Bronchial Asthma, By Henry Horn.
10. Agar-agar in the Treatment of Constipation in Childhood, By John Lovett Morse.
11. The Practical Uses of Electricity in Medicine, By Charles S. Potts.
12. Climatic Treatment of Pellagra, By C. C. Bass.
13. Parsimony in Nutrition, By George M. Niles.
14. A Case of Fracture of the Thyreoid Cartilage with Prompt Recovery, By A. C. Matthews.
15. A Volsellum Forceps with Detachable Handles, By A. Herzfeld.
16. Gunshot Wound of the Chest and Injury to the Spine, By R. T. Ferguson.
17. Bilateral Herpes Zoster, By L. C. Diddy.
18. A Case of Spool Imbedded in the Cervix Uteri, By A P. Stoner.
19. Concussion of the Brain, By Alfred Reginald Allen.

1. Lichen Planus Sclerosus et Atrophicus (Hallopeau).—Ormsby remarks that the literature of this subject betrays some confusion as to what is meant by the term "lichen planus sclerosus et atrophicus." Hallopeau first described this condition, named it "lichen planus atrophicus," and later added the word "sclerosus" to the title. Crocker added the word "morpheacus" on account of the resemblance in certain instances of morphea. That the disease resembles morphea to a marked degree is evidenced in the cases of Stowers, Allen, Schamburg, and others. These patients, when exhibited before dermatological societies, were considered by some to be instances of lichen planus sclerosus et atrophicus, while others classed them as morphea. The symptom complex constituting the disorder as originally outlined by Hallopeau and confirmed by numerous observations since, includes the following: The major portion of patients have been women varying in age from thirty to sixty-three years. They have usually been of nervous temperament. No other important fact has been demonstrated relative to the ætiology. The sites of predilection are the upper portions of the trunk, about the breasts, over the clavicles, extending over the shoulders and downward over the upper part of the back, also the neck, axillæ, and forearms. Lesions also have been noted over the abdomen, on the thighs, about the vulva; and coincident lesions were noted by Hallopeau on the buccal mucosa, and in one case in this report, on the vaginal mucosa. The temple was affected in one of the atypical cases. The characteristic lesion is an irregular, often polygonal, flat topped, white papule. In the case of Morrant Baker, some conical papules were noted. The white color of lesions is striking and has been compared with that of ivory and mother of pearl. At times a distinct yellowish tinge is noted. The papules, as a rule, are firm to the touch, neither elevated nor depressed, but slight elevation may be present. They bend with the skin and when grouped may become wrinkled. As a rule, no areola is present, but at times a rosy or moderately pigmented zone surrounds the papule. They may be discrete or grouped and most cases present both types. When grouped to form plaques, the outline of the individual papules forming the plaques can be determined. Each papule has on its shining, smooth surface from one to several (sometimes as many as twenty) black or dark horny, comedolike plugs, or minute pitlike depressions, which show the former site of the horny plugs. These elements are situated at the pilosebaceous or sweat pore orifices, and are most important from the viewpoint of diagnosis. The wall of the pitlike depressions is of the same nature as the horny plug. The plaques vary in size up to several centimetres in diameter. They show on their surface the outlines of the primary papules containing the horny plugs, or exhibit minute depressions; and the whole plaque shows the peculiar shining white surface characteristic of the primary lesions. A linear arrangement of the papules is at times noted, similar to that seen in ordinary lichen ruber planus. There is, as a rule, no clinical sign of inflammation. The lesions, both papules and plaques, are persistent, but after a variable time, either from treatment or spontaneously, they undergo resolution and leave a delicate, smooth, white, soft, atrophic area of the size and shape of the original lesion, whether it be a discrete papule or a larger plaque. In one patient seen two years after complete involution of the lesions the atrophic scars were still present. The subjective sensations vary. Itching is the rule, but it is usually moderate in grade. A pulling or drawing sensation in described by some patients while in others no subjective sensations are present.

3. Diagnosis of Leprosy.—Dyer and Hopkins remark that the salient points of diagnosis in leprosy consist in the recognition of the stamp of the disease, which is always suggested by the dusky hue, the swollen skin, the overhanging eyebrows, and the raucous voice. The hands, too, have a thinned epidermis and an altered color which is different from that in any other disease. The presence of tubercles in the skin of the face, at the lips and about the nose, with others, in the pendulous parts of the ears—all these should make a case suspicious. The distinctive diagnosis of leprosy, clinically, is at all times simple. There are only two conditions which at all resemble tubercular leprosy, iodism and disseminated tuberculosis cutis. The first named condition is seldom seen in the areas common to leprosy and the nodules of iodism are highly inflammatory and ready to break down. With tuberculosis of the skin, the lesions are numerous, small, and deep seated, under the epidermis as a rule. They are dirty white in color and seldom

assume a reddened hue. Moreover, this condition on the face is unusual and when it does occur, the lesions are more apt to occur bilaterally and symmetrically, in numbers, on the cheeks and wings of the nose than elsewhere. The authors conclude that all physicians should report any cases of leprosy coming under their observation so that the actual occurrence of this disease in the United States may be studied and the statistics derived may be of some value in establishing an institution for the care of leprosy under government control and expense.

5. **Mercury in Phthisis.**—Hartz finds that the only deduction that can be drawn is that mercury, as recommended, has utterly failed as a specific agent in the treatment of pulmonary tuberculosis, and is positively injurious and detrimental to one afflicted with tuberculosis.

7. **Ulcer and Cancer.**—Wilson and Willis state that the relationship to cancer of simple chronic irritation of the unbroken free surface of the mucosa of the alimentary canal, as indicated by clinical data, is not readily demonstrable pathologically. Scar tissue at the bases of ulcers, obliterations of the lumina of appendices, and diverticula segregate portions of mucous epithelium from the neighboring epithelium and from the lumen of the alimentary canal. These portions of segregated mucous epithelium tend to degenerate from pressure and diminished blood supply, or to proliferate and infiltrate the surrounding tissues, thus forming cancer. These islands of segregated epithelium probably should be regarded as points of least resistance only, and requiring the presence of other factors for the production of carcinomata.

10. **Agar-Agar in Constipation.**—Morse states that agar-agar is prepared from hot water extracts of various species of *Gelidium* and differs somewhat in its composition according to its origin. It is sold commercially in the form of strips about eighteen inches long, varying in thickness from that of a straw to that of the finger. It contains about sixty per cent. of carbohydrates, principally in the form of galactosan and pentosan. It is useful in children as well as in adults, in the treatment of the type of constipation associated with small, dry stools. It is harmless and in many instances gives most satisfactory results.

MEDICAL RECORD.

September 10, 1910.

1. A Brief Study of the Contribution of Ignaz Philip Semmelweis to Modern Medicine, By Richard Cole Newton
2. The Ætiology of Prostatic Hypertrophy, By Edgar G. Ballenger.
3. The Antituberculosis Propaganda, By John B. Huber.
4. Acute Inflammations of the Middle Ear and Their Treatment, By M. D. Lederman.
5. Hospital Noise, By H. A. Boyce.
6. The Catching Cold Phobia, By W. Brady.
7. Some Remarks on the Treatment of Pellagra, By George M. Niles.

2. **Prostatic Hypertrophy.**—Ballenger in speaking of the technique to be used in diagnosticating prostatic hypertrophy says that an irrigation of the urethra and bladder is given with a normal saline solution until one to two quarts of the solution has been used. Having the bladder partly filled with the irrigating fluid, the prostate is then massaged and a drop of the secretion which appears at the meatus is placed on a slide; a drop of a freshly prepared one per cent. aqueous solution dahlia is mixed with this drop of secretion. A cover glass then placed over it is sealed in place by applying melted white wax or paraffin around its rim with a camel's hair brush. As a confusing precipitate forms at times, and especially when the specimen contains urine, it should be placed under the lens of the microscope and allowed to remain in this position for fifteen or twenty minutes or longer, to allow the precipitate to settle to the bottom and become quiet, otherwise the Brownian movement of these minute bodies might be mistaken for motile organisms. The germs remain motile for a few days to a week, and a positive diagnosis may be easily made by a series of subsequent examinations, when their motility distinguishes them from the débris which settles and becomes motionless. If preferred, the specimen may be viewed with the dark field illumination and the diagnosis thus made. Fixed smears may also be made and stained in the usual manner, but these rarely give as accurate an idea of the presence of microorganisms as does their method.

4. **Acute Inflammation of the Middle Ear.**—Lederman states that treatment of acute catarrhal otitis media should be started by an active saline laxative. If any elevation of temperature is present, absolute rest in bed for a day or two will assist in bringing about a good result. For the relief of pain, heat seems to be the most efficacious remedy. It may be applied in dry or moist form. The salt, sand, and hot water bags, Japanese hot box, or heated hop rag are well known methods. In the use of the douche, we shall get better effects by combining with it the glass return flow apparatus of Lucae, or Fowler's automatic suction attachment. The latter is especially serviceable when suppuration exists, and continuous drainage is desired. The higher the temperature the irrigating solution can be borne with comfort by the patient the better the result. We must be careful not to parboil the auricle, however; ordinarily a temperature of from 110° to 120° F. will feel very soothing to an adult with a throbbing ear. In children the temperature should be about 105° to 108° F.; a quart of physiological saline solution should be used with the douche every two hours, while the patient is awake. If the pain persists in the interim, a few drops of a ten per cent. carbolized glycerin may be introduced into the external canal after each douching. In children a five per cent. is sufficiently strong. Continuous heat may be applied by salt or hot water bag after the drops are instilled. A mixture of cocaine, menthol, and carbolic acid has also been recommended for the relief of pain, to be similarly employed. The latter is also used as a local anæsthetic when myringotomy is indicated, though nitrous oxide anæsthesia is much more satisfactory to both patient and operator. When bulging of the drum appears we must assist nature by opening through its most prominent portion. A free incision should be made, otherwise good drainage will not follow. To avoid the introduction of infection it is necessary to cleanse the canal with pure alcohol or other antiseptic solution, before incising the drumhead. Douching the ear may then be continued as before mentioned. If an

abscess has already formed this must be incised, and suction is applied in conjunction with the neck constriction. Treatment to the nose and nasopharynx is important. The congested mucous membrane should be reduced by applications of weak adrenalin solutions. All secretion must be removed, and then gentle inflation with the Politzer bag should be attempted. If the parts are very sensitive it is advisable to wait until the active acute symptoms have subsided before using inflation. To protect the sound ear during inflation with the bag, the patient should place the finger tip into the external meatus. If the auscultation tube is employed with the Politzer bag or when the catheter is in position, the presence of secretion in the Eustachian canal or middle ear can be detected. Instead of a blowing sound, râles will be heard. At times it is possible to see fluid through the drum, after the initial congestion has disappeared. A line may be seen extending across the membrane. The level of the fluid is disturbed by changing the position of the patient's head. After inflation, bubbles may be seen in the tympanic cavity, the fluid having been spread by the air pressure.

6. **Catching Cold Phobia.**—Brady contends that cold has no demonstrable ætiological relation with respiratory disease. Clean draughts are not only harmless, but salutary, being requisite for perfect ventilation. The phrase "catching cold" is meaningless, misleading, undignified, and obsolete. The groundless fear of cold, fostered by the abuse of this misleading phrase, constitutes a form of hysteria that opposes and embarrasses earnest therapeutic measures. So far as we now know, the true predisposing factors of the various respiratory diseases (acute and chronic) are dietetic sins, unhygienic clothing, overheated apartments, and defective ventilation. Prophylaxis therefore consists in directing intelligently man's instinctive effort to secure bodily comfort, together with reasonable isolation of every case of respiratory disease.

BRITISH MEDICAL JOURNAL.

August 27, 1910.

1. Remarks on Some Points in the Treatment of Gastric Ulcer, By Charles Bolton.
2. A Clinical Lecture on the Necessity for Operation in Gastroduodenal Ulceration, By K. W. Monsarrat.
3. Hepatic Abscess Following Acute Appendicitis, By Leonard A. Bidwell.
4. A Cause of Death after Operaton for Appendicitis: The Three Lines of Defence, By Herbert H. Brown.
5. Direct Œsophagoscopy. By T. Jefferson Faulder.

3. **Hepatic Abscess Following Acute Appendicular Inflammation.**—Bidwell reports two such cases, discovered during life and treated by operation. The occurrence of hepatic abscess after acute appendicular inflammation is a very rare complication, and although a considerable number of cases have been collected and recorded by Kelly and others, in most of them the suppuration in the liver had only been discovered at a post mortem examination, and the abscesses were multiple, and therefore were scarcely amenable to surgical treatment. One of his cases ended fatally. He remarks that there is little doubt that the poison is carried to the liver by means of the portal vein, and that the abscess results from pylephlebitis. The patches of pylephlebitis must be close together and the infection very virulent for a single abscess to form. When the patches of pylephlebitis are separated from each other by any amount of normal liver tissue, we shall have the condition of small multiple abscesses, which is more commonly found in the post mortem room. It is interesting to note that the pus obtained from a liver abscess does not have the characteristic odor of pus from an abscess in connection with the appendix. With regard to diagnosis, it is practically impossible during life to distinguish between a liver abscess and a subphrenic one. The only point which would suggest abscess of the liver, rather than subphrenic abscess, would be bulging of the right side of the chest with increase in the width of the intercostal spaces rather than pushing down of the whole liver. When an exploratory puncture has been made and the pus has not got the characteristic odor of an appendix abscess the suspicion that the case is one of hepatic abscess will be considerable. It is often stated that cases of hepatic abscess following appendicular inflammation will show some amount of jaundice, or at any rate an icteric tinge in the conjunctivæ. With regard to treatment, it is important that the surgeon should be prepared to operate immediately he has discovered pus by means of an exploring needle, since there is a risk of escape of pus into the pleura or peritoneal cavity when the needle is withdrawn. The abscess will practically always be reached by a similar incision to that employed for subphrenic abscess, namely, one over the ninth rib beyond the anterior axillary line. Portions of the ninth and tenth ribs are resected, and the diaphragm exposed. In some cases the pleura will be opened in this incision, and if so, its edges should be stitched to the diaphragm. When the diaphragm is divided, the posterior surface of the liver is exposed, and the exploring needle should be inserted in the direction in which pus has previously been found. When pus is found a director is passed down by the side of the exploring needle, and the exploring needle removed. Gauze is then packed in between the liver and the diaphragm. A sinus forceps is inserted along the groove of the director into the abscess cavity, and a track broken down through the liver substance by withdrawing the forceps. Along this track a large drainage tube is inserted, and the abscess sac is washed out with saline solution by means of a small catheter inserted through the drainage tube. The drainage tube is fixed to the skin, and the rest of the wound closed. There is little risk of any trouble with the pleura, but there may be more risk of infection of the subphrenic space.

4. **Death after Operation for Appendicular Abscess.**—Brown gives four rules to be followed in appendicular inflammation: 1. Not to be in a hurry to operate, unless an operation can be performed within the first twenty-four hours, when the mischief is presumably confined to the appendix itself, or where general peritoneal infection is impending or has already taken place. 2. When a definite abscess has formed, wait till after the first week; when about ten days have elapsed it is probable that protection will be complete. During this period the patient should of course be kept under close observation, so that an operation can take

place at any time if necessary. 3. Be contented to drain the cavity. Gentle flushing may be employed at the time of the operation if preferred, but do not do more than is necessary for this purpose. 4. Above all things, if operating early, simply evacuate the pus without touching the abscess wall, and leave the appendix to be dealt with at a later date, when all infection has subsided.

LANCET

August 27, 1910.

This is the Students' Number of the *Lancet* for the session 1910-1911, and as such contains an Address to Students, a Students' Guide, and a list of medical examining boards and schools of the United Kingdom.

BERLINER KLINISCHE WOCHENSCHRIFT

August 8, 1910.

1. The Importance of Ehrlich's Arsenobenzol in the Treatment of Syphilis, By Neisser and Kuznitzky.
2. The Relations between Excessive Sensibility and Immunity, By Friedberger.
3. Psychiatry and Serology, By Much.
4. Pseudopulmonary Murmurs and Their Avoidance in Auscultation of the Apex of the Lungs, By Allard.
5. The Question of Emphysema, By Hofbauer.
6. Does the Exciter of Trachoma Arise through Mutation of the Gonococcus? By Halberstaedter.
7. Contribution to the Study of the Meiostagmin Reaction in Malignant Tumors, By Stabilini.
8. The Influence of Lipoid upon the Liver Autolysis, By Satta and Fasiani.
9. Care in Health and Disease, Social Medicine and Medical Statistics, By Meyer.
10. Misuse of a Title Resembling a Medical One, By Lieske.
11. A New, Simple Laryngoscope, By Mayer.

1. Ehrlich's Arsenobenzol.—Neisser and Kuznitzky report that they have used this remedy on nine patients with primary syphilis, forty-eight in the secondary stage, nine in the tertiary, ten in the latent stage, usually years after the infection, six with syphilis of the brain and spinal cord, six tabetics, two paralytics, three patients with parenchymatous keratitis, and three patients who did not have syphilis, two of whom had psoriasis and one leuchæmia. In almost all cases in which visible symptoms of syphilis were present such symptoms retrograded and disappeared in a surprising manner. The results exceeded the most brilliant results of mercury and iodide yet seen. The effect extends not only to the disappearance of the spirochætæ previously present in abundance, but to the pathological process itself. Exceptions were noted. Sometimes spirochætæ were still demonstrable after nine or ten days. Tertiary processes showed for days no tendency to heal, but finally healed slowly. No visible effect was produced in the cases of parenchymatous keratitis. But these are not surprising. In the first place the question arises whether the dose was not too small for the individual affected; then whether the local circulatory conditions always favor so quick a local action of a drug carried in the general circulation. The authors then discuss the introduction of the drug in dissolved or undissolved form by intravenous, intramuscular, or subcutaneous injection. They favor intravenous injections. Mild after effects were noted, nothing serious. The effect on the subjective well being of the patients was good who, in almost all cases, rapidly gained in weight. The action of this new preparation is, they think, directly parasiticide upon the spirochætæ, both destroying them and preventing their increase. Final results are unknown as yet because the first patients were discharged only about three months ago, but they believe that every syphilitic, who does not present special contraindications, should be advised to try this new remedy.

3. Psychiatry and Serology.—Much treated rabbits with serum of patients suffering from hebephrenia, katatonia, and dementia paranoides, and found that animals treated with the dementia paranoides serum produced no specific material; that the animals treated with katatonia serum produced a material that reacted strongly to katatonia serum and weakly to hebephrenic serum; and that animals treated with hebephrenia serum produced a material that reacted to hebephrenia serum alone. Hence the material present in the serum of hebephrenics is only in part similar to that present in the serum of katatonics.

6. Does Trachoma Come through Mutation of the Gonococcus?—Halberstaedter says that neither the morphological behavior of the gonococcus in cultures, nor the inoculation experiments with gonococci on monkeys, nor the many studies that have been made of gonorrhœal and trachomatous mucous membranes, furnish any foundation for the existence of a close connection between gonococci and chlamydozoa. There exists rather between these two organisms the widest morphological and biological difference.

8. Influence of Lipoid upon the Liver Autolysis.—Satta and Fasiani believe that the lipoid of the liver accelerates the autolysis of nitrogenous substances by the liver.

August 15, 1910.

1. Farewell Lecture, By von Olshausen.
2. Results Obtained with Ehrlich's Preparation 606, Dioxydiamidoarsenobenzol, By Isaac.
3. The Subcutaneous Use of Ehrlich-Hata's Syphilis Preparation, By Michaelis.
4. Cirrhosis of the Liver, By Klopstock.
5. The Treatment of Diseases of the Colon with Gas Forming and Pulverized Medicaments, By Skaller.
6. Estimation of Nitrogen in the Contents of the Stomach by Means of Formol and Its Diagnostic Importance, By Barlocco.
7. Contribution to the Biological Analysis of the Chliform Effusions, By Carpi.
8. The Distinction of Sera Containing Sublimate from Sera of Syphilitics who have Been Treated with Mercury, By Mueller.
9. Wassermann's Reaction after Specific Treatment in Hereditary Syphilis, By Igersheimer.
10. Contribution to the Question of the Justification of Spinal and Cerebral Puncture, By Apelt.
11. The Removal of Foreign Bodies from the Œsophagus and the Bronchi with the Aid of the Fluoroscopic Screen, By Freudenthal.
12. Pulsus Paradoxus, or Inspiration Intermittens in Consequence of Compression of the Subclavian between the Clavicle and the First Rib, By Riebold.
13. An Aid to Distinguish the Systole and the Diastole in Auscultation, By Schmincke.

2. Results with 606.—Isaac issues a preliminary report on the results obtained in a series of twenty-seven cases in which he has used 606. The

clinical history of each is sketched briefly. They include two cases of genital chancre with general symptoms; two cases of chancre of the lip with commencing exanthema; a chancre of the labium with all the consecutive signs of syphilis; two cases of indurative œdema of the prepuce with large macular and tuberous exanthemata involving the mucous membrane of the mouth; a case of urethral sclerosis with tuberous syphilide with very rapid retrogression of the induration; three cases of large maculopapular syphilide with all the other signs of general syphilis; four cases of tuberoulcerous syphilide; two cases of tuberoulcerous syphilide in which the larynx was involved, one with broken down papules, the other with a gumma; two cases of tertiary syphilis; a case of latent syphilis with neurasthenic trouble and increasing weakness; a case of lichen urticans; several cases of syphilides without visible primary affection; and a case of very virulent syphilis. With two exceptions the patients bore the treatment well and had their general condition injured but little after the injection. It should not be concealed that under certain circumstances the remedy is attended by certain dangers, and that it should be used on such patients only as have no other serious internal disease. Aside from this Isaac sees no reason why it should not be used just as well as mercury and iodide. He met with no serious disturbances on the part of the nervous system. Pain after the injection he considers an individual matter; women and girls complained of some pain, but were able to get up and about in a day or two, while men complained more and often took several days to recover. The two patients in whom the injection was borne badly had almost no trouble for two days after the injection; on the third day they complained of very severe pain associated with fever and infiltration in the gluteal region, so that they had to be kept under the influence of morphine for many days. In general his observations correspond with those published by other writers.

3. **The Subcutaneous Use of 606.**—Michaelis has tried the subcutaneous injection of this remedy and says that he found it well borne without exception. Often there was severe pain for some hours after the injection, but this was controlled by moist compresses; sometimes a transient pain appeared again on the third day, but sometimes there was absolutely no sign of inflammation. The great advantage presented by the subcutaneous over the intramuscular injection is that walking and sitting are not interfered with by a dense infiltrate. The quickness of the action is greater than after the intragluteal injection because of the greater surface exposed to resorption.

4. **Cirrhosis of the Liver.**—Klopstock questions whether alcohol is a cause of cirrhosis and is inclined to ascribe the frequency with which this disease is met with among drinkers to the reduction of the power of resistance on the part of the organism by alcohol, the same that accounts for the frequency of occurrence of infectious diseases like pneumonia and erysipelas, and for their high mortality among drinkers.

8. **Distinction of Sera Containing Sublimate from Sera of Syphilitics who have been Treated with Mercury.**—Mueller says that sera containing sublimate may be distinguished from those of syphilitics who have been treated with mercury by the fact that in the former the positive reaction diminishes in proportion as the antigen is increased while the opposite holds true in the latter. Yet the possibility must be granted that mercury may act to diminish the Wassermann reaction otherwise than solely through its therapeutic efficiency. This is supported by observation on patients who suffer from recurrent symptoms of syphilis, although there has been no change in the Wassermann reaction that had become negative under treatment.

11. **Removal of Foreign Bodies from the Œsophagus and Bronchi with the Aid of the Fluoroscopic Screen.**—Freudenthal reports a successful case of this nature and refers to the similar cases reported by Huber and Morris.

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT.

August 16, 1910.

1. Origin and Prevention of Puerperal Fever, By Doederlein.
2. The Treatment of Syphilis with the Preparation 606 of Ehrlich, By Iversen.
3. Successful Treatment of a Syphilitic Infant by the Treatment of Its Nursing Mother with 606, By Taege.
4. The Treatment of Typhoid with Pyramidon, By Jacob.
5. Our Observations in Epidemic Cerebrospinal Meningitis, By Eschbaum.
6. Results of Creeping Treatment, By Fraenkel.
7. The Behavior of the Heart in Scoliosis, By Brugsch.
8. The Diagnostic Value and Therapeutic Action of Bismuth Paste in Chronic Suppurations, By Beck.
9. The Personal Factor in Tuberculin Treatment, By Saathoff.
10. The Reduction of the Fever in Patients with Tuberculosis by Means of Koch's Old Tuberculin, By Engel.
11. An Experimental Contribution to the Embryology of Congenital Luxation, By Braus.
12. Beta Chloromorphide as a Companion and Antagonist to Apomorphine, By Harnack and Hildebrandt.
13. Treatment of Suppuration with Potassium Permanganate, By Neumayer.
14. Noesske's Procedure in very Severe Injuries of the Limbs and Threatened Gangrene, By Erkes.
15. A New Eye Dropper, By Driver.
16. Intermittent Lameness, By Goldflam.

2. **Treatment of Syphilis with 606.**—Iversen says that an intravenous injection of 606 is usually followed in two or three hours by a chill lasting half an hour, followed by a rise of temperature, frequently by pains in the limbs, and in some cases by vomiting and fluid stools. No traces of arsenic were detected in the vomited material. The next day the patient feels well except for some weakness. In four cases in which the syphilitic symptoms had not disappeared at the end of three or four weeks, because of an insufficient dose, a second dose was given, was borne well, and produced no unpleasant after effects. Previous treatment with mercury and the iodides presents no bar to treatment with 606. The general condition of the patients was markedly improved after treatment, most of them gained in weight and had good appetites. No bad after effects were observed. It is clear that the rapidity of the disappearance of the syphilis after a single injection of 606 depends on the degree of the ana-

tomical changes. Thus superficial erosions, roseola, plaques, pharyngitises, and anginæ disappear in a few days, while papular and pustular syphilides require from ten to fourteen days or longer. Moist papules dry in a few days, yet their disappearance needs a longer time. In consequence of their anatomical conditions primary scleroses and adenites require the longest time, yet the immediate effect can be noted, as they become softer and gradually melt away until they disappear, taking three or four weeks or more. Ulcerations, gummata, and the symptoms of hereditary syphilis exhibit a beautiful curative effect. In cases of the primary ulcer the exudates of the chancre were examined for spirochætæ and 606 was then injected. Two or three days later no spirochætæ could be found. The same examination was made of the enlarged inguinal glands with the same result. This observation points the way to a method of controlling the treatment, inasmuch as if unchanged spirochætæ should at any time be found in the inguinal glands five or six days after an injection it would indicate that in that case the treatment had been insufficient and that another injection was indicated. Wassermann's reaction became negative in Iversen's cases between the twentieth and fortieth day, in two cases on the eighth and tenth days.

3. **Treatment of a Syphilitic Infant by Injection of the Mother with 606.**—Taege reports a case in which a child born of a syphilitic mother showed the signs of hereditary syphilis. In order to study what effect would be produced on the pathological changes in the child by treatment of the mother, who nursed the infant, she received an injection of 0.3 gramme of 606. On the following two days the symptoms were exacerbated, on the third day they stood still, and then all the symptoms suddenly retrogressed, on the fifth day they had disappeared almost completely, the child no longer whimpered but cried strongly and nursed the breast empty.

4. **Treatment of Typhoid with Pyramidon.**—Jacob reports the results of his experience with pyramidon as an antipyretic in typhoid fever and compares the results thus obtained with those obtained with baths without this drug. From 1907 to 1910 he treated eighty cases with pyramidon with a mortality of ten per cent., and during the same time 127 with baths with a mortality of 14.1 per cent. These figures are too small to be conclusive, but speak favorably concerning the pyramidon treatment.

9. **The Personal Factor in Tuberculin Treatment.**—Saathoff emphasizes the fact that each individual has his own special sensitiveness, and his own type of reaction to tuberculin and lays down two propositions as laws: 1. The capacity for reaction differs in different individuals; 2, the capacity for reaction varies constantly in the same individual. He says that the individual reaction capacity may be determined with Pirquet's inoculation and the persons with tuberculosis divided into four groups. By the puncture reaction the size of the following dose may be determined as well as the interval to elapse between the injections, while the patients are divided into three groups in accordance with the proper dose and interval.

ANNALS OF SURGERY.

September, 1910.

1. A Contribution to the Symptomatology and Surgical Treatment of Spinal Cord Tumors, By J. Ramsay Hunt and George Woolsey.
2. Intestinal Lesions Produced by Blunt Force, By Harvey B. Stone.
3. Transgastric Jejunal Feeding, By Arnold Schwyzer.
4. The Proposed Fistuloenterostomy of von Stubenrauch, By Walter S. Sutton.
5. Permanent Colostomy, By Howard Lilienthal.
6. Myeloma of the Long Bones, By Frank S. Mathews.

AMERICAN JOURNAL OF SURGERY.

September, 1910.

1. Surgery upon the Large Intestine: A General Consideration and Report of a Series of Cases, By John F. Erdmann.
2. A New Method of Intestinal Anastomosis, with Report of Thirteen Cases, By A. L. Soresi.
3. The Nomenclature of the Diseases of the Vermiform Appendix, By Alexis V. Moschowitz.
4. Bier's Hyperæmia in General Practice, By Edward A. Tracy.
5. The Indication for Bier's Hyperæmic Treatment in Acute Surgical Conditions, By Edward Adams.
6. Local Anæsthesia, By Arthur E. Hertzler.

2. **Intestinal Anastomosis.**—Soresi describes his technique for intestinal anastomosis, which consists in a suture method in which the cut ends of the intestines are sutured and inverted over a rubber tube. The size of the tube should be one third less than that of the intestine to be anastomosed, and of about the same length as its diameter. Any tube of soft resilient rubber, about ½ mm. in thickness, can be used. It is prepared in the following manner: A plain cambric needle is threaded with catgut No. 3. Going through the entire thickness of the rubber, a circumferential stitch is made at the middle of the tube, going in and coming out at about 2 mm. In this way a series of external loops is formed, which loops should be about 2 mm. high. The two ends of the catgut are left about 10 cm. long and should be separated about 2 mm. so that when tied they make a loop.

4, 5. **Bier's Hyperæmia.**—Tracy speaks of Bier's method of hyperæmia, which is produced in three ways, constriction, suction, and hot air. He mentions the analgesic, bactericidal, absorbent, solvent, and nutrient effects, and cites cases treated with constriction, suction, and hot air hyperæmia.—Adams treats of the indication for Bier's hyperæmic treatment in acute surgical conditions, which he says is of great aid to the surgeon. Its action is due chiefly to the bactericidal, nutritive, solvent, and absorptive properties which it possesses and the great power it has to diminish pain.

Proceedings of Societies.

MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Meeting of May 16, 1910.

The President, Dr. Reynold Webb Wilcox, in the Chair

The Paradox of the Tubercle Bacillus.—This paper, which was illustrated with some thirty large diagrams and wall charts, was by Dr. Ira Van Gieson. He prefaced his remarks by giving the re-

sults and conclusions of a study of acid fast particles associated with and subject to confusion with the tubercle bacillus, both in sputum and in tissues. In casual examination of sputum with Ziehl's method these particles simulating fragments of the tubercle bacillus were of rather rare occurrence, but in systematic examinations of large numbers of sputa in sanitariums the acid fast particles appeared quite frequently—say, in five per cent. of the daily examinations. Such particles gave precisely the same reaction to Ziehl's method of staining as the tubercle bacillus itself, and apparently had the same degree of acid fastness in retaining the dye. As a rule the particles took the form of minute spherical or slightly elongated points, like tubercle bacilli in miniature, or showed in various intermediate stages from these up to larger, coarser, and sometimes seemingly budding droplets of the same brilliant red hue as the tubercle bacilli. These particles occurred quite uniformly in clusters or in more or less densely packed spherical aggregations inclosed within a rim or halo made by their delimination from the surrounding material of the sputum. Struck by the inclosure of the particles, as if in a hollow spherical envelope, and by their exceedingly capricious appearance in sputum (sometimes suddenly appearing and then vanishing equally abruptly), and noting also the fact that such particles failed to infect guineapigs or to develop in appropriate culture media, the speaker conjectured that these particles might be fatty food globules making their way into the sputum when coughed up immediately after a meal. This explanation had turned out to be correct, for in examining various fatty elements of foods, such as milk, fatty soups, and raw oily substances, precisely similar structures were seen under the microscope when Ziehl's method and decolorization with acid, alcohol, or Pappenheim's rosolic acid solution were employed. These fatty foods, then, especially milk, were liable to contaminate sputum in a highly irregular fashion and to appear as fragments of real tubercle bacilli. In old cheesy material, notoriously difficult as regards a demonstration of tubercle bacilli, the same mistake might be made, for this material, as could easily be demonstrated by osonic acid and other staining methods, contained numerous fat droplets and probably a variety of the fatty acids and derivatives. Among these were certain members of the fatty series the particles of which proved acid fast and might appear under the guise of derivatives of the tubercle bacillus, as exhibited in a number of large scale colored illustrations copied from camera lucida drawings from microscope slides, chiefly of bovine lymph node cheesy material. Fæces, containing as they did palmitic, stearic, and some eight other fatty acids, showed these acid fast fatty particles quite frequently.

The importance of recognizing the fatty character of these confusing acid fast particles associated with the tubercle bacillus was obvious in practical laboratory diagnosis in the examination of sputum, fæces, pus, and the like. Besides the possibility of diagnostic errors in cheesy material, the proper appreciation of these particles was additionally important because of the errors in the literature, in which such particles were mistaken for the degenerative and reproductive forms of the tubercle bacillus, and which had recently received a fresh and voluminous accession under the stimulus of Much's dubious work on the subject. Schlön, d'Arrigo, Spengler, and others seemed wholly averse to the consideration of the real nature of these particles, which so readily masqueraded in the false rôle of conjectural "granules" and "splinters" in degenerative and reproductive phases of the tubercle bacillus.

Dr. Van Giesen then went on to say that what he meant by the paradox of the tubercle bacillus was too familiar to need any extended explanation. The paradox was synonymous with the contradiction encountered in finding no tubercle bacilli under the microscope and yet proving their presence by the results of animal inoculation with companion portions of practically identical material. This had been an old and a puzzling paradox to students of tuberculosis. They knew that old cheesy material, for instance, of bovine origin especially, must contain bacilli in some form because it was virulent; but, in spite of this, they were unable to demonstrate them under the microscope in smear or section. The bacilli, or the remains of them, had become absolutely invisible by the conventional methods of demonstration. The most reasonable explanation of the paradox would be that such elusive bacilli had lost their acid fastness, and then the puzzle would be simple, for such forms would be practically invisible with the methods for their recognition in vogue.

According to his followers, who had built up quite a formidable literature, the credit of solving this important problem belonged to Much. This observer, in comparing and contrasting the several methods for staining the tubercle bacillus, found that the ordinary method of Gram not only appeared to stain more of the bacilli, but here and there also stained minute granules and stairlets (Stäbchen) alongside of them. Having thus got the hint that the invisible tubercle bacilli might be nonacid fast, and at the same time be of unusual form, in minute spherical or miniature stair structures, he extended the intensity and scope of the Gram procedure by prolonged staining—for hours instead of minutes. Applying the modified method to material which was absolutely barren of bacilli by the conventional Ziehl method, it was no great task to convince himself and a good many others that the invisible bacilli had simply escaped detection by methods depending on the property of acid fastness by losing this quality, and had become transformed into the unfamiliar structures of isolated, apposed, or clustered granules and tiny stairlets. Accompanying Much's work were experiments which at first glance seemed to grasp the question indisputably, although in reality they were extremely loose in catechizing the phenomenon and were wide open sources of error. These experiments consisted, quite naturally, in planting bits of the barren tuberculous material in culture media or in the tissues of animals and from time to time, with suitable staining technique, watching the proliferation of the nonacid fast miniature forms of the bacillus and their transformation into the familiar and classical structure of the bacillus into its acid fast form.

Through abundant corroboration of Much's work, the problem now appeared to be settled, and, to epitomize the whole matter, the bacillus was regarded as having under certain circumstances a cycle in which, roughly speaking, one third of its life history appeared in a nonacid fast form eluding detection by our time honored methods. One indication alone of the value of this discovery was that the masked part of the life history of the bacillus was coincident with the phenomena of latent tuberculosis, and a revival of the theory of the transmission of the bacillus in this form to offspring was at hand. If the teaching of this school following Much were true, its importance was secondary only to the discovery of the bacillus itself; but the speaker felt that in this work of Much's his inductions were so fallacious that, far from settling and solving the problem, he had not even properly approached it. Much, it appeared from Dr. Van Giesen's investigations on the subject, had fallen into one of those cleverly masked traps which beset every turn of the scientific investigator, whose excuse that truth was often gained by the pursuit of error was but a poor quibble on the fact that truth was gained through the pursuit of corrected errors. The pitfall in this problem seemed to have been the assumption, as determined in the monographs and conscientiously repeated in the textbooks, that cheesy material and the like in tuberculous lesions was dead stuff, which is structureless, amorphous, and contained nothing but the ashes of coagulation necrosis. Consequently, when these minute bits of chromatin were disclosed in this supposedly lifeless material it was natural to regard them as the only living constituent of this material, namely, the phantoms of the tubercle bacilli; especially since these chromatin particles were the images of what tubercle bacilli might be expected to resemble on the supposition that they had disintegrated and lost their acid fastness beside, although not their vitality to culture or their virulence to susceptible animals.

The only trouble with this accommodating theory was that it was all wrong. Far from having this degradation of structure and being devoid of chromatin life, this avatar of the invisible tubercle bacillus, when studied with especially devised technique, showed an amazing complexity of organic structure in the wealth of chromatin particles and of hosts of leucocytes in all stages of degeneration. It was truly remarkable to witness, as shown in the charts, the persistence of these degenerating leucocytes with their great numbers of extended chromatin filaments and myriads of *granules* and *Stäbchen*, mimicking perfectly what might be expected of degenerating nonacid fast tubercle bacilli. Much and his followers appeared to have fallen into the old makeshift of setting up cell degenerations as scapegoats for the real article when causal organisms were suspected or badly wanted. The Much school seemed wide open to criticism. If they had not eliminated the products of cell degeneration, they had not grasped the problem. If they had mistaken these degenerations for aberrant tubercle bacilli, or confounded the two, a serious blunder had been made, on account of the very grave importance of the subject. Any one who had been accustomed to look beneath the surface of things in cancer, scarlet fever, rabies, trachoma, etc., would not take the scapegoats of the transmission agents seriously, for the brand mark of cellular degeneration was obtrusively plain. But when these degenerations were dragged in under a brand new label in tuberculosis, it seemed time to protest. Besides, the laxness of the experiments, the lack of control experiments, the lack of illustration, so that one might be able to determine just what precisely the observer was talking about, as well as the looseness of the language employed, seemed hardly commensurate with that seriousness becoming the consideration of a problem of this magnitude. For tuberculosis was the most important of all diseases and its most important factor was its early recognition, and one of the most, if not altogether the most important factor in this was the detection of the tubercle bacillus.

Dr. James Ewing said that Dr. Van Giesen had been the first to call attention to and investigate the recent statements of German pathologists as to the nonacid fast types of tubercle bacillus. The subject was certainly a most important one, for if Much was right, we should have to entirely revise our present conceptions concerning the bacillus.

Dr. Henry G. Piffard said he would like to express his opinion, not in regard to a nonvisible type of tubercle bacillus, but to a nonexistent tubercle bacillus. There were now a good many observers who were skeptical as to the importance which had been assigned to the so called tubercle bacillus, and in a paper published in the *New York Medical Journal* nearly a year before he had discussed the question "Is it a definite biological entity, complete in itself, or is it but a phase in the life history of some other organism, probably of higher type, and, if so, is it a degenerated or involuted form?" This matter was still unsettled, but there certainly was considerable ground for believing that it was simply a degenerate form of some other organism.

Intestinal Infections in Children.—Dr. Joseph E. Winters made an address on this subject. The excessive mortality which statistics showed to exist among infants, he said, was well known to be entirely in bottle fed children, and, moreover, in such children in the lower classes of society. Ninety-eight per cent. of the mortality was among infants in the tenement house population. It was unquestionably due almost exclusively to the kind of feeding which these infants received. This gave rise to infectious processes which might prove rapidly fatal from the conditions set up in the intestines, which, if more prolonged, involved other portions of the system. After the first week, bronchopneumonia was extremely common and various other complications might arise, such as pleuritic effusion, otitis media, etc. The treatment was to be based strictly on physiological principles. Ordinary cow's milk, animal broths, and cereals were not only useless, but positively injurious in the case of young infants. The first thing to do was to thoroughly clear out the intestinal canal with a large dose of ice cold castor oil, which was the one remedy adapted for this purpose. If it was vomited, the dose should be repeated. Where vomiting was a feature of the case, there was nothing so efficacious in checking this as hot water in drops, administered with a medicine dropper. For a suitable interval after the oil noth-

ing whatever was to be given, not even water. Then water alone should be given for a considerable time, in small quantities and not too frequently. Finally, the infant was placed upon a food composed of the top half ounce of quart bottles of milk, properly diluted with water, and having lime water added to it. This afforded a flocculent proteid which closely approximated mother's milk.

The results of this treatment had proved entirely satisfactory, and the lives of many infants had been saved by it. As for the milk used for this purpose mentioned, it was desirable that it should be cooled immediately after being drawn, placed in bottles, and afterward kept at a temperature of 40° F. Sterilization or any kind of pasteurization was of no service whatever, as was clearly shown by mortality statistics. The milk to be employed should have been drawn for sixteen hours, and in the city it should be kept on ice for six hours before using. Later, the top ounce, instead of half ounce, from quart bottles of milk should be given, and in older infants the proportion of the bottles used would vary according to the age of the child. In those still older (in the second year) farinaceous food, properly prepared, was as much of a specific for the diarrhœa of children as quinine was for malarial fever or mercury for syphilis, and the results from its administration alone were often marvellous.

Dr. Henry S. Stearns said that Dr. Winter's treatment was certainly most admirable, but, unfortunately, it seemed to be feasible only in well to do families. What of the ninety-eight per cent. of infants in the tenement house population? In most cases there was no refrigerator in the apartment, and how could the poor mothers obtain the three or four bottles of milk required for the food prescribed by Dr. Winters? He was going to ask the doctor to offer some kind of a compromise, for certainly the most important question in this whole matter was that of what could be done for the babies of the poor.

Dr. Henry Dwight Chapin said that he entirely agreed with Dr. Winters as to the necessity for rapid cooling of the milk after it had been drawn. The good result from this was very well shown in the milk which was once offered by a certain farmer for certification by the Milk Commission of the Medical Society of the County of New York. Notwithstanding the fact that the conditions at his dairy were altogether disreputable, the milk was found to have a very low percentage of bacteria, and it was ascertained that he had himself hit upon the plan of cooling it quickly. But, while it was very important that milk should be cooled promptly, Dr. Chapin did not think it was so necessary to keep it cooled afterward, and, in fact, there were scarcely any refrigerators in which it could be kept at a temperature of 40° F. He believed that a good many babies would do well who did not get Dr. Winters's treatment. One very important point was that infants should not be fed too often, and the simple reduction of the times of feeding was often attended with the best results. He felt that he must protest against this high fat feeding which had of late been so strongly advocated. He was convinced that the pendulum had swung too far in this direction, and that the practice, carried to excess, would be likely to result in rickets and other serious sequels. He therefore would draw the line as to the top half ounce, and thought we should go a little lower down in the bottle. As a matter of fact, the putting of any kind of cow's milk into a baby's stomach was the introduction of a foreign body there. It should always be borne in mind that the proteid of milk had two distinct functions, the one nutritional and the other developmental. The coagula of the proteid material were very important in developing the intestinal canal.

Dr. H. Seymour Houghton spoke of those forms of intestinal infection in which there was a sudden outburst of the most alarming symptoms, which might be compared to a violent thunderstorm occurring on a clear summer day. The attacks that he referred to were nonfebrile and nondiarrhœal, and he cited a case of this kind in a child of four years, living under the best conditions and properly fed. There was a sudden onset of stupor, without elevation of temperature, and constipation was present, instead of diarrhœa. The child had been entirely well previously, and afterward never had another attack. Instead of administering castor oil ice cold, as Dr. Winters had recommended, he was in the habit of giving it as hot as possible. Its consistence then being thin, it could be got down with much greater facility than when it was cold.

Dr. Walter Lester Carr said that the Shiga bacillus, in its different phases or varieties, as studied by Flexner, His, and others, was an important element in the summer diarrhœa of infants, as it had been shown that it was the predominating cause in about sixty-three per cent. of cases. In a large proportion of instances there was no blood in the stools, as in the dysentery of adults. All types of this bacillus would continue to keep up the infection in the intestine so long as the use of milk was maintained, and in this way an opportunity was offered for the entrance and breeding of other deleterious organisms. With any form of feeding we had to take some chances.

Dr. William Shannon, having referred to the babies' milk given in Denmark, under the use of which the mortality had been nil, expressed the opinion that a good deal of summer diarrhœa could be prevented by giving mothers instruction in the manner of taking proper care of the milk after it had been received in the morning. If milk was not kept on ice the growth of bacteria in it would be rapid. How to have the poor supplied with a sufficient quantity of ice was a most serious question, but he was convinced that if this could be accomplished the infant mortality would be very materially reduced. He believed thoroughly in the use of cream, properly diluted, as advocated by Dr. Winters. Diarrhœal cases which came under observation late often presented very serious conditions, but by promptly removing all the offending material from the intestinal tract we could generally prevent further infection. He then mentioned certain cases among his patients in which children, notwithstanding the heat of summer, did perfectly well on bottled milk in the city, yet contracted diarrhœa when they went to the country, where they had to

be put on open milk. In his dispensary work he had not found that it was very difficult for mothers to get two or three bottles of milk a day, so that their infants could be fed with the top milk.

Dr. William D. Tyrrell believed that excess of proteid was commonly the exciting cause of the diarrhœa. Such excess always left a residue, and the trouble originating from this in the large intestine soon involved the small intestine. He had never found any difficulty in securing top milk for the infants of the poor, and he was thoroughly in accord with Dr. Winters as to its unquestionable value. He also agreed with the latter as to the value of cereals in infants in the second year, and, like him, had witnessed remarkable results from their use. An important element in the causation of summer diarrhœa was overfeeding. In the heat of July and August infants required less food than in winter, yet very commonly they were given the same quantity and quality of food as in cold weather. It had been found that by simply raising the temperature of the room diarrhœa could be produced. He thought too much could not be said in commendation of Dr. Winters's methods, and knew of no one in the profession who had achieved such excellent results in this line of work.

Dr. Winters said that all that he know of intestinal trouble in infants and its management he had learned in tenement and dispensary practice. He had found no trouble whatever in securing top milk for the babies requiring it, as the mothers were always told to make an exchange arrangement with their neighbors. In dispensary practice he had never used certified milk, but he did not allow open milk. Furthermore, he had never found any difficulty in getting mothers to carry out the treatment faithfully when they were properly instructed. To insure this they were given printed slips, with the special proportions of the food, etc., for their own infants written out on them, and, in addition, the whole matter was explained to them verbally. These women as a rule were most anxious to carry out all the directions implicitly. The speaker said he certainly would never have ventured to express the views which he had put forward this evening if they had not been absolutely based on real work. In the food which he advocated there was not an excess of fat, on account of the dilution of the cream. It was the result of the most careful physiological study, and in appealing to physiology for guidance it was sometimes the case that one man succeeded where others failed. He was convinced that there was nothing which he had brought out in his remarks which was not of real value to any one who had to do with the treatment of children. It was true, as Dr. Chapin had said, that cow's milk was a foreign body in the stomach, but when we took the top half ounce for young infants and the top ounce for older ones, we eliminated that foreign body. As to the bacterial feature of these intestinal troubles, this was eliminated by aborting the action of the bacilli by means of the thorough cleaning out of the bowels with castor oil and the subsequent prolonged use of water, thus getting rid of the material which had caused the disease. The whole basis of successful medicine, it could be confidently asserted, was physiology.

Letters to the Editor.

INVERSION IN THE TREATMENT OF PULMONARY ŒDEMA.

Omaha, Neb., *September 5, 1910.*

To the Editor:

In reference to the discussion in your journal of September 3d, page 475, of the treatment of œdema of the lungs, I should like to relate an experience.

In 1883, while I was senior assistant on the staff of the New York Maternity Hospital, we had one afternoon a case of puerperal coma. The woman did not have convulsions. I was ordered by my "House" to administer to the patient half a grain of pilocarpine hypodermically. I at once recalled the earnest face of Professor McLane as he cautioned us against the use of this drug in this condition. He said: "It will produce diaphoresis all right, which you want; but it will produce another condition, the name of which begins with 'd,' which you don't want." I therefore made the dose of pilocarpine one fourth of a grain. The diaphoresis came, sure enough. Along with it there was so rapid an infiltration of the lungs and transudation into the bronchi that it appeared the patient would quickly suffocate. The various remedies referred to were tried with little or no relief. I then picked the patient up bodily and let her hang in an inverted position with her head near the floor. Immediately profuse streams of serum ran from her mouth and nose, forming a big puddle, which ran across the floor. Free breathing was rapidly restored. The process was repeated several times and the patient did not die from œdema of the lungs.

I have seen immediate relief in other cases by this treatment. It is not, of course, always applicable.

W. F. Milroy, M. D.

Book Notices.

[*We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.*]

Post Mortem Manual. A Handbook of Morbid Anatomy and Post Mortem Technique. By Charles R. Box, M. D., B. S., B. Sc. Lond., F. R. C. P. Lond., F. R. C. S. Eng., Physician to the Out Patients, St. Thomas's Hospital, etc. London: J. & A. Churchill, 1910. (Through P. Blakiston's Son & Co., Philadelphia.) Pp. xi-335. Price, $2.40.)

Dr. Box has had a long experience of post mortem work and has thus been able to place before the profession a valuable book. It is essentially a manual to be used in the autopsy room and therefore does not enter into details on microscopical examinations or bacteriological identifications, although notes are found which indicate circumstances under which such examinations may be desirable. The book contains ten chapters, the first of which deals with the examination of the exterior body, and the second with methods of opening the body. In Chapters III to VIII is treated the examination of the several parts, organs, cavities, etc., of the body. In Chapter IX the author speaks of the post mortem examination of the newly born, and in Chapter X we find such subjects considered as embalming, restitution, the toilet of the body, etc.

A Manual of Midwifery. For Students and Practitioners. By HENRY JELLETT, B. A., M. D., F. R. C. P. I., L. M., King's Professor of Midwifery in the School of Physic, Trinity College, Dublin, etc. With the Assistance in Special Subjects of W. R. DAWSON, M. D., F. R. C. P. I., H. C. DRURY, M. D., F. R. C. P. I., T. G. MOOREHEAD, M. D., F. R. C. P. I., and R. J. ROWLETTE, M. D. Second Edition, With 17 Plates and 557 Illustrations in the Text. New York: William Wood & Co., 1910. Pp. xi-1210. (Price, $6.)

Jellett, who himself belonged to the staff of the Rotunda Hospital in Dublin, has added to his previous two manuals on the subject a third which is written for students and practitioners. It appears in the second edition, and seems to be brought up to date. The author, without going too much into detail, gives a good review of the art of midwifery, and his list of writers quoted shows that he is well read. The illustrations are instructive and the text is clear.

The book is divided into ten parts, which treat of obstetrical anatomy, asepsis, and antisepsis; the physiology of pregnancy, of labor, and of the puerperium; the pathology of pregnancy labor, and the puerperium; obstetrical operations; and the infant.

Founders' Week Memorial Volume. Containing an Account of the Two Hundred and Twenty-fifth Anniversary of the Founding of the City of Philadelphia, and Histories of its Principal Scientific Institutions, Medical Colleges, Hospitals, etc. Edited by FREDERICK P. HENRY, A. M., M. D., and JOHN V. SHOEMAKER, M. D., Chairman of the General Committee on Scientific Institutions, Medical Colleges, and Hospitals of Philadelphia, and ex officio of the Committee on Publication. Published by the City of Philadelphia, 1909. Pp. xvi-912.

During the week from October 4 to 10, 1908, the citizens of Philadelphia celebrated the 225th anniversary of the founding of the good city of brotherly love, and the week received the name of Founders' Week, it being determined by a commission appointed by the mayor that in the year 1683 took place the founding of the city which was destined to become later the birthplace of the Declaration of Independence. The celebration was the most notable event in Philadelphia since the centennial exposition. To commemorate this week the general Committee on Scientific Institutions decided to publish a memorial work on the scientific institutions, hospitals, and medical schools of Philadelphia. The work before us is this report, which can well be called a standard history of the scientific and charitable institutions of Philadelphia. It is a collection of articles written by experts selected by the institutions as those best qualified to write their histories. The articles have been arranged according to the age of the institutions, and the day on which a charitable institution began its beneficent functions has been adopted as that of its birth.

The volume is beautifully got up and illustrated and typographically of excellent appearance.

Manual of Tropical Medicine. By ALDO CASTELLANI, M.D. (Florence), Privat-Docent (Naples), Director of the Clinique for Tropical Diseases, Ceylon, etc., and ALBERT J. CHALMERS, M. D., F. R. C. S., D. P. H., Registrar and Lecturer on Pathology and Animal Parasitology, Ceylon Medical College, etc. University Series. New York: William Wood & Co., 1910. Pp. xxv-1242. (Price, $6.)

The authors have added a good book to the list of textbooks on tropical medicine. The volume is arranged so that it can be used not only as a textbook, but also as a reference work. We thus find in part I an introduction, to be followed in parts II and III by the causation of disease in the tropics and the diseases of the tropics. Part II gives the physical, chemical, and biological courses of disease, while part III is divided into fevers, general diseases, and systemic diseases. All this is treated in sixty chapters, to each of which is added the literature. The index is complete and the list of authorities is proof of the great research of the authors in literature.

We wish to call special attention to the chapters dealing with chemical causes of disease, in which will be found poisons used in the tropics, poisonous foods, and venomous animals. Of beriberi, the authors summarize our present knowledge thus: "It appears more likely that a parasite will be found to be the spreader of the disease, which makes it more probable that the actual cause will be found to be a protozoon than that it is due to diet, which, however, may be a predisposing cause, especially if the nutritive value of the food is low or the proportion wrong." Of rhus poisoning they only go into detail with *Rhus vernicifera*, the lacquer tree. The treatment given by the authors consists in washing the skin thoroughly with soap and water and using soothing applications, such as cold lotions, or lotio plumbi subacetatis. This does not coincide with the treatment prevalent with us for *Rhus toxicodendron* or *Rhus venata* poisoning. Tuberculosis, only in its form of phthisis, is mentioned statistically. Of leprosy, it is stated: "Everything in the history of the disease appears to favor its spread by animal agency (p. 840) . . . the initial lesions and the symptoms, if any, have escaped notice." Very interesting is also the chapter on trypanosomiasis.

MEDICOLITERARY NOTES.

Apparently we have wasted a good deal of sympathy on the supposedly unhappy lot of orphans, subjected, so we thought, to a dull and loveless routine behind the cold walls of some institution. We are informed by Arno Dosch, in the September *Cosmopolitan*, that there are not enough babies to go around among respectable and well to do but sterile couples. It is sad, however, to learn that little cripples are not wanted. There should be some way of securing the advantages of a home for these most appealing of all the world's unfortunate.

* * *

The popular view of euthanasia, as opposed to the well known decision of the medical profession, finds voice in *The Mother of the Man*, by Eden Phillpotts. Samuel Bolt is mortally injured by the explosion of the engine of a steam roller. "Owing to the religious opinions of his doctor, he suffered for six days longer than was necessary. To let any injured beast but man endure half as much would have outraged England. We may ruin ourselves body and soul with the spirit of the poppy and none can interfere; but let euthanasia be offered to the dying, so that a fellow creature shall suffer some few throbs less of mortal agony, and humanity protests in the name of law and order and religion. . . . Jill . . . never left her husband and never ceased to implore the doctor to hasten his end, after it was certain that Samuel could only linger horribly for a few days. But medical science, with the skill of the Inquisition, fed him and

fortified him. The doctor said afterward that the whole College of Surgeons could not have kept Samuel Bolt alive an hour longer. He was proud of his achievement."

* * *

A shop devoted exclusively to the sale of French books has been obliged to close in uptown New York. It is a pity, for there can be no general culture without a knowledge of French. There was a time when every medical graduate in the United States tried to spend a few months in Paris. The Franco-Prussian war had the extraordinary result of diverting the current of graduates to Germany. Nothing succeeds like success and in the most unexpected directions. Nowadays we get our first inkling of important French thought through German or English journals—filtered through both only too often. Although French is an extraordinarily difficult language to speak and write idiomatically, it is not hard to read, particularly in scientific works. A year with a phonograph and a novel or two will repay the student by opening up to him immense vistas of literature not likely ever to be translated.

* * *

Leonard Keene Hirshberg, M. D., conducts The Mothers' Bureau of the *Delineator*. In the September issue he gives advice on the home treatment of acute rheumatic fever, which seems to be overdoing the department somewhat, especially as an unfavorable prognosis has been given of the case which he discusses. Eleanor Chalmers gives careful advice to stout and middle aged women on what to wear. It is shocking to learn that this advice is intended to teach such women how to look younger and less stout, obviously with the intention to undo the opposite sex.

* * *

Dr. Woods Hutchinson tells readers of the September *Delineator* of the danger line in patent medicines. Dr. Hutchinson has achieved sufficient fame in his popular medical articles to entitle him to caricature in a recent number of *Life*, the humorous organ of the Antivivisectionists. We sometimes wonder what the army of political testimonial writers, from United States senators down, think of themselves in view of the recent revelations regarding patent medicines. Many are returning to private life this fall, where their opinions will do less harm.

* * *

A somewhat humorous cast is given to many crusades against beer and cigarettes by our knowledge that the ardor of the Crusaders was in many cases greatly sustained by some patent medicine which owed its deceptive efficacy to a large percentage of alcohol or a comparatively liberal dose of some form of opium. The spectacle of perfectly normal people allowing themselves to be bullied and dictated to by disordered brains that need the constant support of a narcotic would sweep away many an insane campaign in a tempest of Homeric laughter if its true nature was once thoroughly understood. There is still, inherited from our Pilgrim fathers, a sneaking idea that anything very enjoyable must be wicked, and this makes us yield weakly to the ravings of various religious and other cranks.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of and deaths from cholera, yellow fever, plague, and smallpox were reported to the surgeon general of the United States Public Health and Marine Hospital Service for the week ending September 9, 1910:

Place.	Date.	Cases.	Deaths.
Cholera—Insular.			
Philippine Islands—Manila	July 10-23	30	20
Philippine Islands—Batangas	July 10-23	60	25
Philippine Islands—Bulacan	July 10-23	196	140
Philippine Islands—Mountain Province	July 10-23	2	2
Philippine Islands—Nueva Ecija	July 10-23	171	116
Philippine Islands—Pampanga	July 10-23	51	43
Philippine Islands—Pangasinan	July 10-23	841	651
Philippine Islands—Rizal	July 10-23	28	16
Philippine Islands—Tarlac	July 10-23	33	31
Cholera—Foreign.			
China—Fatshan	July 1		Epidemic
China—Hongkong	July 10-16	9	6
India—Bombay	June 26-Aug. 2		1
India—Calcutta	July 10-16		14
India—Negapatam	July 2-8		13
India—Rangoon	July 17-23		1
Japan—Awajii Island	July 22-28	3	
Japan—Ibogun	Aug. 5	3	1
Java—Batavia	July 17-23	30	18
Russia—General	July 17-23	13,374	5,979
Russia—Archangel, government	July 17-23	1	
Russia—Astrakhan, government	July 17-23	272	132
Russia—Baku, government	July 17-23	178	76
Russia—Baku	July 17-23	47	24
Russia—Bessarabia	July 17-23	3	2
Russia—Black Sea, province	July 17-23	162	45
Russia—Cronstadt	July 17-23	2	
Russia—Daghestan, territory	July 17-23	21	11
Russia—Don, territory	July 17-23	2,826	1,292
Russia—Kaluga, government	July 17-23	7	
Russia—Kertsch	July 17-23	106	47
Russia—Kharkov, government	July 17-23	434	174
Russia—Khazan, government	July 17-23	29	17
Russia—Kherson, government	July 17-23	350	168
Russia—Kief	July 17-23	76	26
Russia—Kostroma	July 17-23	75	32
Russia—Kuban, territory	July 17-23	2,811	1,421
Russia—Kursk, government	July 17-23	233	74
Russia—Moscow, government	July 17-23	3	2
Russia—Moscow, government	July 24-Aug. 6	16	7
Russia—Nizchninovgorod, government	July 17-23	125	36
Russia—Novgorod, government	July 17-23	1	
Russia—Odessa	July 17-23	73	40
Russia—Orenburg, government	July 17-23	121	31
Russia—Pensa, government	July 17-23	30	8
Russia—Perm, government	July 17-23	14	4
Russia—Podolia, government	July 17-23	46	12
Russia—Poltava, government	July 17-23	250	75
Russia—Rjasan, government	July 17-23	166	60
Russia—Rostov on Don	July 17-23	151	36
Russia—Samara, government	July 17-23	409	240
Russia—Sarapul, government	July 17-23	1	
Russia—Saratov, government	July 17-23	402	184
Russia—Simbirsk, government	July 17-23	100	44
Russia—Stavropol, government	July 17-23	348	164
Russia—St. Petersburg, government	July 17-23	13	6
Russia—St. Petersburg	July 17-23	209	46
Russia—Tambov, government	July 17-23	101	46
Russia—Taurida, government	July 17-23	417	179
Russia—Tchernigov, government	July 17-23	183	59
Russia—Terek, territory	July 17-23	386	153
Russia—Tiflis, government	July 17-23	180	70
Russia—Tula, government	July 17-23	6	1
Russia—Ufa, government	July 17-23	6	3
Russia—Vitebesk, government	July 17-23	5	
Russia—Volhynia, government	July 17-23	16	10
Russia—Yaroslav, government	July 17-23	22	11
Russia—Yekaterinslav, government	July 17-23	1,967	909
Siam—Bangkok	June 19-July 18	52	52
Yellow Fever—Foreign			
Brazil—Para	Aug. 7-20	17	10
Sierra Leone—Freetown	July 16-Aug. 1	3	3
Plague—Foreign			
Argentina—Tucuman	Feb. 26-May 31	37	16
Chile—Iquique	July 17-30	4	
China—Amoy	July 17-30		5
China—Canton	July 13-30	38	27
China—Hongkong	July 17-23	1	1
India—Bombay	July 26-Aug. 2		338
India—Calcutta	Aug. 10-16		18
India—Kurrachee	July 24-30	1	1
India—Rangoon	July 17-23		31
Siam—Bangkok	June 19-July 18	15	13
Venezuela—La Guaira	Aug. 13	1	1
Smallpox—United States			
Louisiana—New Orleans	Aug. 21-27	2	
Minnesota—Carver County	July 4-10	1	
Minnesota—Faribault County	July 25-31	1	
Minnesota—Hennepin County	July 24-31	1	
Minnesota—Mower County	July 11-17	4	
Minnesota—Ramsey County	June 27-July 31	8	

Place.	Date.	Cases.	Deaths.
Smallpox—United States.			
Minnesota—Rice County	July 4-10	1	
Minnesota—Wright County	July 4-31	2	
Montana—Butte	July 1-31	13	
Montana—Dawson County	July 1-31	8	
Montana—Fergus County	July 1-31	6	
Montana—Silver Bow County	July 1-31	2	
Montana—Teton County	July 1-31	2	
Utah—Davis County	July 1-31	9	
Utah—Juab County	July 1-31	1	
Utah—Salt Lake County	July 1-31	3	
Utah—Utah County	July 1-31	1	
Utah—Weber County	July 1-31	7	
Virginia—Alexandria	Aug. 25	1	
Smallpox—Foreign			
Brazil—Para	Aug. 7-20	10	5
Chile—Valparaiso	July 14-20	42	
China—Shanghai	July 18-Aug. 7	1	6
Great Britain—Liverpool	Aug. 14-20	1	
India—Bombay	July 26-Aug. 2		4
India—Calcutta	July 10-16		1
Italy—Naples	Aug. 14	1	
Mexico—Mexico	July 24-30		2
Portugal—Lisbon	Aug. 6-13	58	
Russia—Libau	Aug. 8-14	5	
Russia—Moscow	July 24-Aug. 6	21	8
Russia—Riga	Aug. 14-20	18	
Russia—Warsaw	May 27-June 4		4
Siberia—Vladivostok	July 15-21	1	
Spain—Barcelona	Aug. 8-14		2
Straits Settlements—Penang	July 3-9	1	1
Straits Settlements—Singapore	July 17-23	2	

Public Health and Marine Hospital Service:

Official list of changes in the stations and duties of commissioned and other officers of the United States Public Health and Marine Hospital Service for the seven days ending September 7, 1910:

ANDERSON, JOHN F., Passed Assistant Surgeon. Granted one day's leave of absence from September 2, 1910, under paragraph 189, Service Regulations.

ASHFORD, F. A., Passed Assistant Surgeon. Granted one month's leave of absence from August 30, 1910.

CARTER, H. R., Surgeon. Detailed to proceed to certain ports in Europe upon special temporary duty relative to measures for the prevention of the introduction of Asiatic cholera into the United States. September 2, 1910.

COBB, J. O., Surgeon. Directed to proceed to Manitowoc, Wis., upon special temporary duty September 1, 1910. Detailed to represent the Service at the annual meeting of the American Public Health Association, to be held in Milwaukee, Wis., September 5-9, 1910. September 2, 1910.

DREW, A. D., Acting Assistant Surgeon. Granted thirty days' leave of absence from September 5, 1910.

FROST, W. H., Passed Assistant Surgeon. Directed to proceed to Grundy-center, Iowa, upon special temporary duty. August 29, 1910.

GEDDINGS, H. D., Surgeon. Directed to proceed to Marseilles and Genoa, Italy, upon special temporary duty relative to measures for the prevention of the introduction of Asiatic cholera into the United States, and then rejoin station at Naples, Italy. September 1, 1910.

KERR, J. W., Assistant Surgeon General. Detailed to represent the Service at the annual meeting of the American Public Health Association, to be held in Milwaukee, Wis., September 5-9, 1910.

KOLB, LAWRENCE, Assistant Surgeon. Granted seven days' leave of absence from August 28, 1910, under paragraph 191, Service Regulations.

LLOYD, BOLIVAR J., Passed Assistant Surgeon. Granted twenty-nine days' leave of absence from August 20, 1910.

MARR, H., Acting Assistant Surgeon. Granted fifteen days' leave of absence from September 5, 1910.

MCMULLEN, JOHN, Passed Assistant Surgeon. Granted twenty-one days' leave of absence from September 3, 1910.

MOORER, M. P., Acting Assistant Surgeon. Granted six days' leave of absence from August 14, 1910.

MULLAN, E. H., Passed Assistant Surgeon. Granted five days' leave of absence from August 1, 1910, under paragraph 191, Service Regulations.

O'NEILL, ARTHUR A., Acting Assistant Surgeon. Granted ten days' extension of leave of absence from August 9, 1910, on account of sickness.

OTT, C. R., Pharmacist. Granted one day's leave of absence, August 25, 1910, under paragraph 210, Service Regulations.

PETTUS, W. J., Assistant Surgeon General. While on leave in England, directed to proceed to Southampton, Liverpool, and Glasgow upon special temporary duty relative to measures for the prevention of the introduction of Asiatic cholera into the United States, and then resume leave status. September 2, 1910.

RANSOM, S. W., Acting Assistant Surgeon. Granted thirty days' leave of absence from September 1, 1910.

SCHUSTER, B. L., Acting Assistant Surgeon. Granted three days' leave of absence from September 7, 1910.

SPRATT, R. D., Passed Assistant Surgeon. Granted one day's leave of absence, August 27, 1910, on account of sickness.

STEARNS, WILLIAM L., Pharmacist. Granted twenty-one days' leave of absence from September 6, 1910.

STIER, CARL, Pharmacist. Granted one day's leave of absence, August 27, 1910, under paragraph 210, Service Regulations.

WALKER, T. D., Acting Assistant Surgeon. Granted one day's leave of absence, September 8, 1910.

WASDIN, EUGENE, Surgeon. Granted one month's leave of absence from August 22, 1910, on account of sickness.

WILLE, C. W., Passed Assistant Surgeon. Directed to proceed to Ashtabula, Ohio, upon special temporary duty. September 1, 1910.

WETMORE, W. O., Acting Assistant Surgeon. Granted three days' leave of absence from August 11, 1910, under paragraph 210, Service Regulations.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending September 10, 1910:

ALLEN, JOHN H., Major, Medical Corps. Left Fort Myer, Virginia, September 7th, on ten days' leave of absence.

BAKER, CHARLES L., Lieutenant, Medical Reserve Corps. Now on duty in Sequoia and the General Grant National Parks; will accompany Troop A, 1st Cavalry, to the Presidio of San Francisco, California, and upon arrival will report to the commanding officer of that post for duty.

BARNEY, CHARLES N., Major, Medical Corps. September 6th, left Fort Wadsworth, N. Y., en route home awaiting retirement, being granted leave of absence to December 31, 1910.

BEVANS, JAMES L., Captain, Medical Corps. August 30th, ordered to proceed from San Francisco, California, with one half of Company "B" Hospital Corps, to the Camp of Instruction at Atascadero, California, for duty.

BOURKE, JAMES, Captain, Medical Corps. August 25th, ordered to proceed with troops from Fort Leavenworth, Kansas, to the Fair Grounds, Des Moines, Iowa, for duty during the Military Tournament at that city, September 26 to October 1, 1910.

CASADAY, GEORGE H., D. S. September 3d, left from duty at Fort Baker, California, en route to the Philippine Islands, for duty.

CLARKE, JOSEPH T., Major, Medical Corps. August 25th, ordered to proceed with the troops from Fort Crook, Nebraska, to the Fair Grounds, Des Moines, Iowa, for duty during the military tournament at that city, September 26 to October 1, 1910.

FISK, OWEN C., Lieutenant, Medical Corps. August 25th, ordered to proceed with the troops from Fort Crook, Nebraska, to the Fair Grounds, Des Moines, Iowa, for duty during the military tournament at that city, September 26 to October 1, 1910.

FULLER, LEIGH, Major, Medical Corps. August 25th, ordered to proceed with troops from Fort Riley, Kansas, to the Fair Grounds, Des Moines, Iowa, for duty during the military tournament at that city, September 26 to October 1, 1910.

GRUBBS, ROBERT B., Major, Medical Corps. September 1st, reported on detached duty at Fort Sam Houston, Texas, from Camp at Leon Springs, Texas.

HALLETT, HARLEY J., Lieutenant, Medical Reserve Corps. September 6th, granted thirty days' leave of absence terminating not later than November 3, 1910.

HARRIS, H. S. T., Lieutenant Colonel, Medical Corps. August 26th, ordered to proceed from San Francisco, to Camp of Instruction, Atascadero, California, for duty.

Murtaugh, John A., Major, Medical Corps. August 25th, ordered to proceed with troops from Fort Riley, Kansas, to the Fair Grounds, Des Moines, Iowa, for duty during the military tournament at that city, September 26 to October 1, 1910.

Rand, I. W., Major, Medical Corps. September 3d, left Fort Hancock, New Jersey, on ten days' leave of absence.

Reynolds, Royal, Lieutenant, Medical Corps. September 7th, ordered to Presidio of San Francisco, California, for temporary duty.

Stallman, George E., D. S. August 27th, returned to Fort Sam Houston, Texas, from Leon Springs, Texas.

Van Dusen, James W., Captain, Medical Corps. August 25th, ordered to proceed from Fort Riley, Kansas, to the Fair Grounds, Des Moines, Iowa, for duty during the military tournament at that city, September 26 to October 1, 1910.

Walker, Thomas C., Lieutenant, Medical Reserve Corps. September 7th, granted leave of absence for two months, to take effect upon arrival in the United States.

Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending September 10, 1910:

Bloedorn, W. A., Assistant Surgeon. Detached from the navy yard, Mare Island, California, and ordered to duty at the naval hospital, Canacao, Philippine Islands.

Boland, M., Assistant Surgeon. Detached from the *Castine* and ordered to duty at the naval hospital, Philadelphia, Pa.

Boyd, J. C., Medical Director. Detached from command of the Naval Medical School, Washington, D. C., and ordered to duty as a member of the naval retiring board, navy yard, Washington, D. C.

Cohn, I. F., Passed Assistant Surgeon. Detached from naval hospital, Philadelphia, Pa., and ordered to the *Castine*.

Dean, F. W. S., Passed Assistant Surgeon. Detached from the *Prairie* and ordered to the naval magazine, Iona Island, N. Y.

Fiske, C. N., Surgeon. Detached from the Bureau of Medicine and Surgery, Navy Department, and ordered to duty at the Naval Medical School, Washington, D. C.

Foster, T. G., Passed Assistant Surgeon. Detached from the naval hospital, Mare Island, California, and ordered to duty at the naval hospital, Canacao, Philippine Islands.

Freeman, G. D., Surgeon. Detached from the *Montana* and ordered to duty at the naval dispensary, Naval Medical School Hospital, Washington, D. C.

Gatewood, J. D., Medical Inspector. Detached from duty on board the *California* as fleet surgeon of the Pacific Fleet, and ordered home to await orders.

Grieve, C. C., Passed Assistant Surgeon. Detached from the navy recruiting station, Chicago, Illinois, and ordered to the *Prairie*.

Hull, H. F., Passed Assistant Surgeon. Detached from the *Paducah* and ordered to the *Panther*.

Kelley, H. L., Assistant Surgeon. Detached from the naval hospital, Mare Island, California, and ordered to the navy yard, Mare Island, California.

Lowndes, C. H. T., Surgeon. Detached from the naval dispensary, Naval Medical School Hospital, Washington, D. C. and ordered to the Baltimore Naval Recruiting Station.

McDonell, W. N., Passed Assistant Surgeon. Detached from the Naval Academy and ordered to the *Massachusetts*.

McMullin, J. J. A., Assistant Surgeon. Detached from the naval magazine, Iona Island, N. Y., and ordered to the *North Carolina*.

Manchester, J. D., Passed Assistant Surgeon. Detached from the *Panther* and ordered to the navy recruiting station, Chicago, Illinois.

Miller, J. T., Assistant Surgeon. Detached from the *North Carolina*, and ordered to the naval recruiting station, St. Louis, Mo.

Norton, O. D., Medical Inspector. Detached from the Navy and Marine recruiting stations, New York, N. Y., and directed to await orders.

Smith, C. G., Surgeon. Detached from the naval hospital, Newport, R. I., and ordered to the *Montana*.

White, E. C., Passed Assistant Surgeon. Detached from the naval recruiting station, St. Louis, Mo., and ordered to temporary duty at the naval hospital, Mare Island, California.

Wieber, F. W. F., Medical Inspector. Detached from the naval recruiting station, Baltimore, Md., and ordered to duty at the naval and marine recruiting station, New York, N. Y.

Wise, J. C., Medical Director. Detached from duty as a member of the naval retiring board, navy yard, Washington, D. C., and directed to await orders.

Births, Marriages, and Deaths.

Died.

Alexander.—In Chicago, Illinois, on Sunday, September 4th, Dr. E. S. Alexander, aged thirty-eight years.

Ashton.—In Washington, on Friday, September 9th, Dr. Stuart A. Ashton.

Blackwell.—In York Cliffs, Me., on Thursday, September 8th, Dr. Emily Blackwell, aged eighty-five years.

Dashiell.—In Princess Anne, Md., on Sunday, September 4th, Dr. John W. Dashiell, aged ninety-three years.

Donnelly.—In Toledo, Ohio, on Sunday, September 4th, Dr. James Donnelly, aged fifty years.

Drake.—In Windsor, Ont., on Tuesday, September 6th, Dr. William H. Drake, aged seventy-eight years.

Dulaney.—In Bristol, Va., on Saturday, September 3d, Dr. Nathaniel Dulaney, aged seventy-six years.

Dundor.—In Reading, Pa., on Saturday, September 3d, Dr. Adam B. Dundor, aged seventy-two years.

Faber.—In St. Louis, Mo., on Monday, September 5th, Dr. John Edmund Faber, aged eighty years.

Fetzer.—In Sheraden, Pa., on Saturday, September 3d, Dr. Stanley C. Fetzer, aged twenty-eight years.

Genth.—In Lansdowne, Pa., on Friday, September 2d, Professor Frederick Augustus Genth, Jr., aged fifty-five years.

Hamnett.—In Meadville, Pa., on Monday, August 29th, Dr. Jonathan Hamnett, aged ninety-five years.

Hatfield.—In Wharncliffe, on Wednesday, September 7th, Dr. Wayne Hatfield.

Hyde.—In Trout's Neck, Me., on Tuesday, September 6th, Dr. James Nevins Hyde, aged seventy years.

Kinnaman.—In Ashland, Ohio, on Monday, August 29th, Dr. Guy C. Kinnaman, aged thirty-two years.

Lewellen.—In Maineville, Ohio, on Monday, September 5th, Dr. J. O. Lewellen, aged forty years.

Linstead.—In Torrington, Conn., on Monday, September 5th, Dr. Henry Linstead, aged thirty years.

McInery.—In Mount Vernon, N. Y., on Monday, September 5th, Dr. James H. McInery, aged fifty years.

Miller.—In Newport, Va., on Friday, September 2d, Dr. J. W. Miller.

Rhorer.—In Lexington, Ky., on Monday, September 5th, Dr. Melvin Rhorer, aged sixty-eight years.

Rosenwasser.—In Cleveland, Ohio, on Sunday, September 4th, Dr. Marcus Rosenwasser, aged sixty-four years.

Ross.—In Scranton, Pa., on Saturday, September 3d, Dr. Matthew Ross, aged fifty-six years.

Russell.—In Fulton, N. Y., on Monday, September 5th, Dr. Stephen A. Russell, aged sixty-one years.

Sanford.—In Colorado Springs, Col., on Friday, September 2d, Dr. W. B. Sanford, aged fifty-nine years.

Sellers.—In Weyers' Cave, Va., on Friday, September 9th, Dr. J. F. Sellers, aged forty-two years.

Steffen.—In College Point, N. Y., on Friday, September 9th, Dr. Fred Steffen, aged fifty-two years.

Theard.—In New Orleans, La., on Monday, September 5th, Dr. Sidney L. Theard, aged forty-two years.

Van De Warker.—In Syracuse, on Tuesday, September 6th, Dr. Ely Van De Warker, aged sixty-nine years.

Wood.—In Kingston, Ont., on Thursday, September 1st, Dr. Isaac Wood, aged fifty-seven years.

Yager.—Near Shelbyville, Ky., on Saturday, September 3d, Dr. Chancellor Yager, aged fifty-two years.

New York Medical Journal

INCORPORATING THE

Philadelphia Medical Journal and The Medical News

A Weekly Review of Medicine, Established 1843.

VOL. XCII. No. 13. NEW YORK, SEPTEMBER 24, 1910. WHOLE No. 1660.

Original Communications.

AMBULANCE SURGERY—ITS PROBLEMS.

BY THOMAS A. CHEATHAM, Ph. G., M. D.,
New York,

Ambulance Surgeon, Gouverneur Hospital.

The ambulance service of New York city is regulated with the same systematic exactness that controls the Police and Fire Departments. Certain districts are allotted to hospitals supported by or receiving appropriations from the city, and at each of these hospitals a corps of surgeons and well equipped ambulances are kept in readiness to answer calls at any time during the day or night, making it possible for medical attendance to be had in any part of the city in less than ten minutes from the time the call is sent in. Ambulance calls may be sent in by any one, but usually come from patrolmen on duty through Police Headquarters or from physicians in private practice who wish to have their cases transferred to the hospital. Two minutes after the call is received at the hospital, the ambulance surgeon, having registered his name and time of departure, is on his way to see the patient. A patrolman meets the ambulance at its destination to obtain a record of the case and render any protection or assistance needed. The patient is examined at once and treated if necessary. Then a history of the case is obtained, a provisional diagnosis made, and the disposition of the patient decided upon. Contagious diseases are reported to the Board of Health, patients with erysipelas and insanes are taken to Bellevue Hospital, acute alcoholics may be taken to the nearest police station, and, upon request, a patient may be taken home. With the exceptions named, the surgeon must consult the patient's wishes about going to the hospital, as he cannot force him to go or refuse to take him, and he must rely upon his tact and the confidence in the patient to eliminate insignificant and undesirable cases from the wards.

Gouverneur Hospital protects the most congested and interesting part of the city, the lower East Side. The heavy traffic of the three great bridge terminals, the narrow crowded streets, and still more crowded tenement houses and sweat shops naturally afford much emergency work, giving to this hospital six thousand ambulance calls yearly. Among the half million inhabitants of this district every race, creed, nation, and condition in the social scale of life is represented, the lower classes predominating. In some sections, poverty and depravity reign supreme. Human beings are found herded together like cattle, as many as ten in a small room, existing without regard to personal comfort or hygiene, in blissful ignorance of the necessity of fresh air and sunshine, and in quarters saturated with the fumes of garbage, musty from lack of ventilation, and filthy to a degree beyond the appreciation of the average American. The ambulance surgeon, who is probably the only one profiting by such conditions, finds this an ideal field for diagnostic experience, and having to deal with problems which embrace every phase of medicine, his professional ability is taxed second only to the personal equation of the man, this being tested to the last degree by the appalling ignorance, babbling tongues, and energetic gesticulations of his patients. The majority of these people are Russian Jews, Hungarians come next in number, then Italians, Greeks, Irish, Japanese, and Chinese. France and Germany contribute very lightly, and the negro is almost an unknown quantity.

STAB WOUNDS.

When called out to attend a patient who has been stabbed, the ambulance surgeon finds everybody excited and overflowing with brainless curiosity; however, his self confidence and vanity makes it an every day affair for him to assume absolute charge of the situation, clear away a working space and calmly examine the wounds. If hæmorrhage exists, how is it best to stop it? Tourniquet? Pressure bandage? Artery forceps? Local applications? Decide and act post haste. This done, the next thought is, are any vital parts involved? Is the wound superficial or deep? What bloodvessels have been severed? Are any viscera involved? What is the degree of shock? Does the patient need immediate hospital attention? If shock exists, stimulate at once. Superficial wounds are cleansed, swabbed with the tincture of iodine, and sutured. If the case is serious, or any doubt exists, control hæmorrhage and rush to the hospital where a careful, unmolested examination may be made. Operative procedures must be based upon symptoms, as stab wounds are lacerations, incisions, or punctures, and are more often insignificant than serious. A mental review of the anatomy of the part quickly decides the extent of the injury.

GUNSHOT WOUNDS.

Some one shot! This means anything from mild excitement to a fighting mob and requires even more coolness and deliberation on the part of the doctor than a stabbing case. No time should be lost in locating wounds of entrance which are small and punched out, and wounds of exit, which are larger than the bullet and more or less funnel shaped. First control hæmorrhage by means best adapted to the location of the wound. Above all

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things, *do not use a probe*, this is an unnecessary, uncalled for, dangerous, and unpardonable breach of the principles of modern surgical technique. The calibre and kind of bullet, its direction and distance traversed, and position of patient should be ascertained. Wounds of the extremities and muscular tissues are not necessarily dangerous, but when a bullet enters the skull, chest, or abdomen, a careful examination must be made before a prognosis can be advanced. Shock requires immediate attention and must be treated before the removal of the patient, whisky, strychnine, and atropine being commonly used. When the hæmorrhage is slight, a sterile gauze pad placed over the wound and held in place by a firm bandage, is quite efficient as a temporary dressing. Practically all gunshot wounds require hospital treatment, and it is a rare exception to treat such wounds or attempt to remove bullets on ambulance duty. Each case has its individuality, and the advisability of operative measures must be governed by the condition and symptoms. The x ray is indispensable in locating bullets and aiding the surgeon in deciding upon the advisability of removal.

BURNS AND SCALDS.

Burns and scalds of every degree are encountered, usually from direct contact with a cooking stove, or from boiling water from a kettle pulled from a stove by a curious child who unfortunately must depend on a crowded kitchen for a playground. While a distinction is made between burns and scalds, the symptoms, treatment, and prognosis are practically the same. When not more than one fifth of the body surface is involved by burns of the first or second degree, a one per cent. solution of picric acid may be applied to advantage after the part has been thoroughly cleansed and irrigated with normal saline solution. These patients do not require hospital treatment and may be left in care of a person with ordinary intelligence, but where one third or more of the skin is involved, the prognosis is grave, and the patient requires the experienced and unstinted care for which the poorer class of people are dependent upon charity hospitals. Death almost invariably follows when one half or more of the skin is burned, the direct cause being shock and failure of the kidneys to properly take up the extra work of excretion forced upon them by the loss of function in the large area of skin involved. Morphine is used to allay pain. Ointments of ichthyol, zinc oxide, etc., may be used but are not advised. Carron oil is to be deplored as it acts as a hot bed for pyogenic bacteria and does much more harm than good. Saline baths and exposure to open air is the routine hospital treatment.

ABORTION.

Abortion is the bane of the ambulance surgeon's existence. A satisfactory history of the case is practically never obtained, the patient simply knows that she is bleeding from the vagina or has passed several large blood clots and has pain around the internal organs of generation. Objective symptoms must be relied upon entirely. A thorough search is made for the fœtus among the clots, bedding, and bed pan or urinal, as the expulsion or retention of the fœtus is of paramount importance. Has the entire product of conception been expelled? Vaginal examinations are not permitted and this question often remains unsettled until the patient is examined under aseptic precautions in the hospital. Hæmorrhage is controlled temporarily by packing the vagina with sterile gauze and applying a vulva pad held in place by a T binder. Threatened abortions are treated by absolute rest in bed and the administration of sedatives. Hospital care is indicated in nearly all cases of abortion, and no time should be lost in getting the patient to the ward where treatment and observation can be instituted under ideal conditions.

LABOR.

Labor cases are detested by the ambulance surgeon and justly so because of the deplorable conditions usually found and the fact that almost invariably the patient waits until the eleventh hour to call in a doctor. The diagnosis has already been made by the policeman who sends in the call, and the ambulance surgeon has only to decide whether time enough remains to reach the hospital ahead of the stork. Desperate chances are sometimes taken, the writer having successfully conducted two labor cases in the ambulance while rushing to the hospital at a breakneck speed. Often it is necessary to handle instantly cases at the home of the patient, and such conditions of filth are found that asepsis is out of the question, and luck is all that saves mother and child from infection and subsequent death. Umbilical dressings, Credé's solution of silver nitrate, fluid extract of ergot, bichloride of mercury tablets, and sterile gloves are carried in the ambulance bag and greatly facilitate the successful outcome of many cases. Whenever possible, labor cases are taken to the hospital for delivery, and after treatment. No one ever questions the wisdom of this step.

SCALP WOUNDS.

Many calls come from police stations, the patients being prisoners or complainants who have received injuries which require immediate attention.

Scalp wounds are numerous and cause alarm because of the profuse hæmorrhage occasioned by the separation of tissues, which because of their density and tenacity, tend to preserve the natural contour of bloodvessels, giving free access to the flow of blood which, being under pressure, crowds into a point of least resistance and fails to clot because of the mechanical force that continually throws fresh blood into the wound, washing away that which has been altered by unnatural surroundings and changes in temperature, pressure, and the chemical action of air. Hæmorrhage may be controlled by a firm bandage over a pad of sterile gauze. Obstinate cases may require suturing before a satisfactory result is obtained. Every scalp wound is carefully examined for a possible fracture of the skull, the wound being enlarged if necessary. Antisepsis is resorted by shaving a liberal space around the wound and applying undiluted tincture of iodine. Interrupted sutures of horse hair or catgut are used in closing the wound, the former being preferable because it is less liable to infection than catgut. Drains of sterile gauze packing or rubber tissue are advisable in dirty cases where the deep layers of tissue are involved.

COMA.

Doubtless the most serious problem an ambulance surgeon is called upon to solve is the diagnosis, treatment, and disposition of prisoners who are discovered in an unconscious state a few minutes to many hours after being locked in a cell.

Many cases have been reported where a man under the toxic influence of a powerful narcotic or with a fractured skull has been arrested and imprisoned on a charge of acute alcoholism, then left alone to die because the fumes of alcohol were detected on his breath and the ignorant patrolman or careless physician had been blind to all other symptoms. One drink produces an alcoholic breath for several hours and even this drink may have been given by a modern Samaritan, whose sympathy, friendship, benevolence, and knowledge are concentrated in a whisky bottle. Careful examination and a few clear cut points of differential diagnosis reveal the facts in most cases. The symptom complex, however, must be taken into consideration as no hard and fast rule is reliable in making a diagnosis, and two or more widely different conditions may coexist causing a conglomeration of symptoms sufficient to mislead the most experienced diagnostician. Unconsciousness may be due to compression of the brain, apoplexy, alcoholism, opium poisoning, uræmia, epilepsy, heat stroke, diabetes, hysteria, etc.

Cerebral compression, whether due to abscess, intracranial hæmorrhage, tumors, foreign bodies, or a depressed fracture, is ushered in by mental excitement, restlessness, flushed face, vomiting, and a slow pulse which becomes slower, regular, and strong. Then follows dullness, drowsiness, stupor, and finally coma accompanied by stertorous respirations which frequently assume the Cheyne-Stokes type. At this stage there may be involuntary evacuations of urine and fæces, the pulse becomes weak, intermittent, compressible, and progressively rapid. The pupils are frequently unequally dilated and do not react to light. The presence or absence of paralysis depends upon the extent and location of the compression.

In *alcoholic coma,* the unconsciousness is not absolute, pressure on the supraorbital nerves almost invariably arousing the patient temporarily; an alcoholic breath is always present; no paralysis exists; the pupils are equal and react to light; the pulse is more or less rapid; and the temperature, if altered, is subnormal.

Apoplexy may occur simultaneously with brain injury, uræmia, or alcoholism, beginning with a single severe convulsion following which total unconsciousness occurs together with hemiplegia, slow, full pulse, unequal pupils, which do not react to light, and in the early stage a subnormal temperature. Marked arteriosclerosis and old age strongly predispose to this condition.

Uræmic coma is characterized by repeated violent epileptiform convulsions which involve the muscles of the face and hands rapidly spreading over the body, subnormal temperature, usually œdema of the legs, exaggerated knee jerks, and contracted pupils. No paralysis or stertor exists. Drowsiness and delirium precede actual coma.

Opium poisoning produces coma which comes on slowly. There may or may not be the odor of laudanum on the breath. Pin point pupils are almost diagnostic. The respirations are slow, shallow, and quiet, or may be stertorous; pulse slow and full; temperature subnormal. No paralysis exists, and the patient may be temporarily aroused by vigorous shaking, or by shouting in his ear, but immediately goes back into a deep narcotic sleep, and if he speaks at all, it is to beg to be allowed to sleep undisturbed.

The *coma* of *epilepsy* is sudden in onset, unconsciousness is absolute for a time, the respirations are stertorous, and there is often bloody froth about the mouth. The convulsions are characterized by a tonic spasm of a few seconds duration followed by clonic spasms which last a few minutes and probably coma varying in duration from a few minutes to a few hours.

In *diabetic coma* the odor of acetone is detected in the breath, the onset is sudden, vomiting is the rule rather than the exception, and the respirations are slow and deep. Laboratory findings and the history of the patient are indispensable in confirming the diagnosis.

Hysterical coma occurs in boys and women of a nervous temperament. No objective symptoms can be relied upon as diagnostic. Complete unconsciousness may be present, but usually a few whiffs of strong ammonia will bring about a very gratifying result.

Heat stroke may be easily distinguished by the unusually high temperature, sudden onset, and history of exposure. The lividity of the face, followed by cyanosis, is characteristic.

When any doubt exists as to the ætiology of any case of coma, the patient is removed to the hospital at once, his stomach lavaged, colon irrigated, urine analyzed, eyes examined with an ophthalmoscope, and the patient is treated for brain injury until the diagnosis is made clear.

CONVULSIONS.

Because of their spectacular nature, the average layman is much alarmed by convulsions, this symptom of so many nervous disorders being commonly looked upon by him as a distinct disease. Almost daily the ambulance surgeon finds himself confronted by a patient actively convulsed or just recovering from a paroxysm, frequently on the street where only the conflicting and often ridiculous information volunteered by bystanders must be taken *cum grano salis* to strengthen the picture presented by objective symptoms. Among the causes of convulsive seizures deserving serious consideration are epilepsy, hysteria, uræmia, eclampsia, tetanus, strychnine poisoning, arsenic poisoning, cocaine poisoning, chronic lead poisoning, food poisoning, and acute anterior poliomyelitis.

Epilepsy is most frequently met with, the convulsion being heralded by an aura of lightheadedness and helplessness, preceded by an involuntary cry and ushered in by a tonic spasm of all the muscles lasting a few seconds to two minutes and followed immediately by a clonic spasm which usually lasts several minutes. The face is pale, then flushed, livid, and cyanotic. The jaws are fixed at first, but this is soon replaced by crunching and gnashing of

the teeth. Froth which may be bloody is frequently found about the mouth. Unconsciousness is absolute during the convulsions which are usually multiple, growing less and less frequent, but greater in severity. The pupils are dilated and the temperature is somewhat elevated. A history of previous attacks if obtainable points strongly toward epilepsy.

Hysteria occupies a prominent place among the causes of convulsions, occurring commonly in women who have "nerves," especially those cursed by an actively emotional disposition and an idle existence. The onset is gradual, the face does not change in color, but assumes emotional expressions of depression and pain. Convulsions occur irrespective of any set of muscles or of their nerve supply, rigidity being marked and painful. Consciousness is preserved, and the patient may talk or scream during an attack or bites his tongue, lips, or hands. Clearly defined areas of anæsthesia or hyperæsthesia may be outlined; the pupils are equal and react to light; the corneal reflex is preserved. The temperature remains normal and no involuntary evacuation of excreta occurs. The thumbs, which in epilepsy remain rigidly flexed, may be forcibly straightened. Convulsions of this type may be speedily terminated by sudden shock to the patient such as the inhalation of strong ammonia or the hypodermic administration of apomorphine hydrochloride, the latter being a more or less heroic measure and contraindicated except in obstinate cases where there is no cardiac or respiratory asthenia.

Acute strychnine poisoning is attended by convulsions which enjoy an individuality almost pathognomonic. The onset may be gradual, beginning with muscular twitchings and restlessness but usually the first toxic symptom is a violent, cramplike, painful convulsion, always tonic, rigidity sometimes occurring with such force and suddenness as to throw the patient several feet away, but usually only sufficiently severe to cause opisthotonus. The face is wreathed in a ghastly grin (risus sardonicus); the eyes are open and fixed; the muscles of the jaws which are first affected in tetanus, being the last to become rigid and set.

A distinct period of relaxation occurs between convulsions and unconsciousness is not absolute. Incontinence of urine, seminal ejaculation, and markedly increased reflexes are found. The whole nervous system is so acutely irritated that a slight noise or touch is sufficient to awaken violent convulsions which, with the patient undisturbed and absolutely quiet, would not recur.

The *convulsions of tetanus* differ from those of strychnine poisoning in that spastic paralysis of the temporal and masseter muscles occurs before the convulsion and there is no period of complete relaxation between the spasms. A history of injury producing an infection atrium or finding evidence of same is usual in tetanus.

In *uræmia* convulsions are the exception rather than the rule and when present are epileptiform, recur rapidly, and unconsciousness persists during intervals between spasms. The pupils are contracted, knee jerks exaggerated, temperature variable, walls of bloodvessels thickened, and aortic second sound accentuated. The breath is laden with the odor of violets. Urine analysis reveals albumin and casts, and is a valuable adjunct in making a diagnosis.

In *eclampsia,* tonic spasm of the voluntary muscles, including rigidity of the jaw and diaphragm, occurs, the face and eyes turn to the right, following which are clonic spasm of the great muscles of the trunk and extremities. Eclampsia, accepting the common usage of the word, is the culmination of the toxæmia of pregnancy and occurs in the extremes of social life, being equally frequent among women who live in the lap of luxury and those whose vitality is sapped out by hunger, hard work, and neglect, usually occurring after the average child bearing period. The patient remains conscious during the convulsions, and well known symptoms precede the attack. Urine analysis is of great value in confirming the diagnosis.

Cocaine poisoning and the accompanying convulsions become of special interest because of the number of these cases found in lodging houses and low resorts on the Bowery, especially around Chatham Square and in Chinatown. Actually finding the drug on the person is common, but this is hardly necessary, as cocaine fiends are so devoid of shame that they voluntarily confess "hitting up the coke." The pupils are widely dilated, the cardiac and respiratory functions disordered, and wild delirium with hallucinations of creeping things and a sense of impending danger humbles the habitué to a wild eyed, scared wreck of degenerated humanity who begs for protection with the desperate sincerity of a hunted animal at bay. The convulsions are epileptiform and present no diagnostic characteristics.

Rarely *chronic lead poisoning* causes epileptiform convulsions (encephalopathia saturina). The occupation of the patient, blue line on the gums, gastric pain, and wrist drop usually make the case clear.

Arsenic poisoning may present as a late symptom epileptiform convulsions. There is nothing characteristic about these seizures. The severe abdominal pain, profuse rice water stools, constriction of the pharynx, cardiac and respiratory asthenia, and history must be relied upon in making a diagnosis.

Acute anterior poliomyelitis occurs in early childhood and usually in the summer months after an acute illness. The convulsions which may be followed by coma lasting several hours, have no characteristic features. The flaccid paralysis with preservation of sensation and wasting of muscles, present an unmistakable picture.

Food poisoning may cause convulsions, especially in children, but usually the spasm is due to the severe abdominal cramps. Gastroenteritis, marked abdominal pain, general muscular weakness, and the history of taking improper or contaminated food strongly point toward this condition.

FRACTURES AND DISLOCATIONS.

Season has something to do with fractures and dislocations. In Winter fractures of the femur, Colles's and Pott's fractures predominate because of icy streets and the consequent frequency of falls. Summer contributes fractures of the skull from falls while sleeping on fire escapes (and thousands of children on the East Side sleep on fire escapes every

night from June until September), and fractures or dislocations about the hand among baseball players. The diagnosis is usually easy, based on crepitus, preternatural mobility, and usually deformity for fractures, and impaired motion, deformity, and no crepitus for dislocations. Fractures of the upper extremity are reduced and proper splints or bandages applied. Fractured ribs are strapped with adhesive plaster. A fractured pelvis or bone of the lower extremity usually requires hospital treatment, and a temporary immobilizing splint is applied before the removal of the patient. Compound fractures are cleaned thoroughly and liberally swabbed with tincture of iodine before reduction is attempted or splint applied. Fractures of the base or vertex of the skull may always be looked upon as serious, and the patients are taken to the hospital for more thorough examination and subsequent observation. Depressed fractures of the skull require immediate operation, the depression being removed as a prophylactic measure even when no symptoms are produced.

Dislocations, it must be remembered, consist of ruptures or stretched ligaments and abnormally located bone ends, trauma being a result of local violence. The anatomy of the joint must be recalled, and in attempting reduction an effort is made to retrace the course of the dislocated bone, resorting to traction and manipulation with countertraction and a conservative amount of force. When the accepted methods for reduction have been tried without success, it is better to return to the hospital and try again with the relaxation of anæsthesia rather than run the risk of fracturing a bone by violent handling. The after treatment is important, the joint being immobilized long enough to permit repair of ruptured ligaments. Operation may be necessary and is the rule rather than the exception in cases of long standing.

SUICIDE.

Less than ten per cent. of attempts at self destruction are successful because the would be suicide is naturally a coward and his yellow streak is highly developed in time of danger. For instance, a woman who decided to end all by swallowing a tablet of corrosive sublimate, changed her mind because the tablet had a disagreeable taste. A man, after writing a farewell note, turned on the gas and lay down to die; the odor of the gas soon became objectionable, so he decided to open a window and breathe the fresh air while the gas did its deadly work. The experience gave him a headache. Asphyxiation by illuminating gas is the most popular and probably most successful method of suicide, being frequent among Jews and usually encountered in Bowery lodging houses among poverty stricken and discouraged men who have seen better days. Elaborate contrivances are sometimes resorted to, one patient having sealed every crack in the room, proved his ingenuity by tying a lever to the stopcock of the gas jet which could be manipulated by a string attached to his head, then tying a connecting tube in his mouth, secured his hands behind him and turned on the gas by changing from a sitting to a reclining posture. Gratifying results crowned his efforts. Phenol is becoming less popular since the Board of Pharmacy has heavily fined pharmacists who sell a solution containing more than five per cent. of carbolic acid. Pistols are only used by the few who mean business and have the nerve to carry out their intentions. Knives and razors are seldom used. Morphine, cocaine, strychnine, and Paris green are not neglected, each claiming an occasional victim.

Longshoremen and sailors prefer submersion, but few are successful.

LEGAL ASPECT.

The ambulance surgeon is frequently called upon to testify in civil suits, criminal and coroners' cases, and after one experience with a clever lawyer whose exacting, rapid fire cross examination will make one swear to almost anything, he learns to refrain from expressing opinions and to know as little as possible, but to know that little well. Street car and automobile accidents are daily encountered, and it is far better to make notes of injuries and conditions at the time than to rely on memory for correct testimony when the case comes to trial. When any trouble arises with the patient or bystanders, the ambulance surgeon, invested with the authority of a police sergeant, may make arrests or command the policeman to do so. When a patient dies within twenty-four hours after arriving at the hospital, the ambulance surgeon is required to make a written statement of symptoms or injuries found when the patient was first examined and the circumstances connected with the case, such as time, place, mode, and extent of injuries, and whether accidental or with homicidal or suicidal intent.

"Dead on arrival" cases are simply pronounced dead without attempting a diagnosis and reported to the coroner.

The writer begs to acknowledge frequent reference to the works of his former instructors, J. C. Da Costa, W. W. Keen, E. P. Davis, H. A. Hare, E. E. Montgomery, and to Osler's *Modern Medicine.*

EPISTAXIS IN ITS RELATION TO VARIOUS CONSTITUTIONAL DISEASES.*

By Harold Hays, A.M., M.D.,
New York,
Assistant Surgeon in Otology, New York Eye and Ear Infirmary.

By many of the older physicians, epistaxis was considered of some value and any bleeding from the nose was suggestive of some general condition. Hippocrates speaks of it as indicative of a favorable crisis in acute fevers and of its serious import in various chronic diseases. He recognized the relationship between epistaxis and enlargement of the spleen and other abdominal organs. Galen mentions its value in depleting the system in cases of vascular tension associated with fever. Aretæus regarded epistaxis or blood letting from the nose as a means of relieving headache and advised that it be artificially induced by means of special instruments. Sydenham, who was a great advocate of blood letting and was disgusted with the idea of any means of stoppage, argued that blood letting itself was the best means of stopping a nose bleed.

*Read at the Section in Laryngology, New York Academy of Medicine, May 25, 1910.

Incidentally, it may be remarked that over a century ago, T. P. Frank arrested nasal bleeding by pushing into the nostril a piece of dried hog's intestine, tied at one end so as to form a pouch like the finger of a glove and distending this with water by means of a syringe, the proximal end tied and the plug left in position.

Sir Morell Mackenzie[1] stated that the constitutional causes of epistaxis may be due to: 1. Alterations in the constituents of the blood; 2, disease of the blood vessels; 3, obstruction to the circulation causing a strain of the whole system; the nose suffers first because the vessels are superficial and in places the veins are enlarged to cavernous sinuses; 4, the blood from the nose may be a vicarious discharge.

In general these four causes hold good to-day. And to them may be added: 1. That epistaxis often may be, and is caused by a lowered resistance of the tissues due to various chemical and bacterial toxines; and, 2, that epistaxis may result from a pathological change in the nasal mucosa due to a local infection at this site but caused by a general disease.

The constitutional diseases with which epistaxis is associated may be divided into seven groups:

Group I. Infectious diseases: Typhoid fever, measles, scarlet fever, diphtheria, whooping cough, cerebrospinal meningitis, pneumonia, influenza, erysipelas, smallpox.

Group II. Anæmias and other blood conditions:

a. Anæmias; secondary anæmia; chlorosis; pernicious anæmia.

b. Hæmophilia, leucocythæmia.

c. Purpura hæmorrhagica (rheumatism), scurvy.

d. Malaria.

Group III. Circulatory diseases:

a. Diseases of the heart: Mitral stenosis, tricuspid stenosis, congenital cardiac disease (usually associated with polycythæmia), aortic insufficiency, disease of the coronary arteries and aneurysm.

b. Diseases of the liver, cirrhosis.

c. Diseases of the kidneys, chronic interstitial nephritis.

d. Diseases of the bloodvessels: Arteriosclerosis, (a) apoplexy, (b) endarteritis obliterans.

Group IV. Respiratory diseases: Chronic bronchitis and emphysema, pleurisy with effusion, empyema and tumors pressing on the lungs.

Group V. Specific local inflammations: Syphilis, tuberculosis, leprosy, carcinoma.

Group VI. Miscellaneous diseases: Vicarious menstruation, caisson disease.

Group VII. Drug poisoning: Phosphorus, chloralamide, salicylic acid compounds.

Group I. Infectious diseases:

This list of the various infectious diseases in which epistaxis occurs is significant. In some of them it occurs with more or less frequency and may be of value as a premonitory symptom. It is well to know that an epistaxis may come on during measles, scarlet fever, whooping cough, and meningitis, and its importance in these conditions is in proportion to the amount of blood that is lost. However, in other infectious diseases, the interpretation of the direct cause of the hæmorrhage is very important, as, for example, in acute lobar pneumonia where the inability of a part of the lungs to exercise its function, creates an increased blood pressure, a methæmoglobinuria, and consequent turgescence of the tissues. The bleeding from the nose in such a case may be life saving, diminishing the blood pressure and the consequent strain on the lungs. Epistaxis is frequently stated to be one of the first signs of typhoid fever. The hæmorrhage is seldom profuse but may be prolonged and even fatal. The cause of the hæmorrhage is not definitely known but as in many of the other infectious diseases, the toxines of the bacteria which generate the disease probably exercise their effect at the point of least resistance in the nasal mucosa.

The site of predilection of the nose for hæmorrhage may be easily accounted for when the body resistance is lowered as in infectious diseases, because of the anatomical relations of the vessels existing there. The blood supply is unusually large. The anterior and posterior ethmoidal vessels, originating from the ophthalmic, supply the ethmoidal cells, frontal sinuses, and roof of the nose. The sphenopalatine artery, arising from the internal maxillary, supplies the mucosa of the turbinates, the meatuses, and the septum. The inferior artery of the septum arises from the superior coronary, a branch of the facial. These various vessels form a close plexiform network. The ophthalmic, arising from the internal carotid, and the internal maxillary and facial arising from the external carotid are large vessels with numerous tributaries. However, the mucosa of the nose offers a peculiar lack of resistance, and the tissues are intimately connected with bone and therefore expansion is limited. Moreover, even taking into consideration the intimate relationships of veins and arteries, the return of blood through venous channels is impeded because of the flimsiness of the surrounding structures. The deduction is plain. The tissues become engorged, the venous return flow is proportionately impeded, and the delicate mucosa gives way under the increased strain.

The time it takes for the hæmorrhage to cease, depends upon two factors, the stoppage of the bleeding by coagulation of blood in the vessels themselves, or because the necessity for the hæmorrhage has disappeared.

The appearance of a serous, frothy, bloody discharge from the nose is often seen in cases of nasal diphtheria. In fact such a discharge should make one suspicious of a membrane within the nose. Naturally a localized condition gives rise to the discharge and in many instances the constitutional symptoms are either very mild or are not present at all. The only possible means of making a positive diagnosis is by taking a culture and finding the Klebs-Loeffler bacilli.

However, there are certain cases of pharyngeal or laryngeal diphtheria with which a bloody nasal discharge or a true epistaxis is associated. In the former instance the secretion may be passed through the nares from the throat. In the latter, a subacute inflammatory condition within the nasal fossæ is probably produced from contiguity with the surrounding infected tissues, or the lack of

[1] Morell Mackenzie. *Diseases of the Nose and Throat*, ii, 1884.

resistance may be due to the action of the diphtheria toxine itself acting on the terminal nerve fibres within the bloodvessels, producing a paresis of the vessel walls, a localized engorgement and consequent rupture of the nasal mucosa at the weakest point. Even where no membrane is found in the nose or throat, the continuous bloody discharge may arise from lodgment of diphtheria bacilli in the antrum of Highmore and other accessory sinuses.

The observations of Councilman, Mallory, and Pearce[2] have shown that it is very common for the accessory sinuses of the nose, especially the antrum, to be involved in fatal cases. This probably explains the remarkable persistence of the bacilli where no lesion is evident.

The epistaxis in scarlet fever is often the result of the increased vascularity of the various mucous membranes of the nose, throat, ears, pharynx, etc., caused by the streptococcic inflammation present.

Bloody discharge is observed more often in those cases which assume the pseudodiphtheria type or so called membranous angina. The membrane begins on the tonsils and spreads to the surrounding parts, pharynx, mucosa of the nose and ear. The parts underneath are swollen and congested until nasal breathing is almost impossible. The bleeding usually confines itself to an oozing of a thin, bloody, serous discharge from the raw surfaces. Gangrenous angina is seen in the worst cases. The gangrene may appear insidiously in any part of the pharynx or nose and spread to the deeper parts until at times there is an exposure of the large bloodvessels which may become eroded and produce a hæmorrhage which is fatal. The hæmorrhage usually occurs in the throat but the erosion may extend more deeply over the turbinate bones and septum causing rupture of the sphenopalatine or inferior artery of the septum. The nasal hæmorrhage is not as dangerous *prima facie,* as a hæmorrhage in the throat on account of the smaller calibre of the vessels. Nevertheless any hæmorrhage under these conditions is serious, primarily on account of the poor condition of the patient who cannot afford to lose any blood, and secondarily, because the tissues being in such a friable condition, local measures to stop the bleeding are almost impossible.

In the ordinary cases of scarlet fever, epistaxis is caused by the diminished resistance of the patient on account of the toxæmia. In the pseudodiphtheritic and gangrenous cases, the hæmorrhage is caused mainly by the local condition.

In measles, the catarrhal condition in the throat is more likely to extend downward into the larynx, bronchi, and lungs. The catarrh is usually a postnasal catarrh, and if epistaxis occurs it usually is not of serious import. However, there is a condition known as hæmorrhagic measles where the hæmorrhage is so severe that it may be fatal. The epistaxis which may occur in such a case is usually associated with hæmorrhage elsewhere, and the concomitant hæmorrhages may be more serious prognostically than the epistaxis.

The only constant pathological picture presented in pertussis or whooping cough is a catarrhal inflammation of more or less intensity of the respiratory tract—nose, pharynx, larynx, trachea, and bronchi. Paroxysmal attacks of coughing result which may be prolonged until convulsions ensue. As a rule, children with pertussis present punctate hæmorrhages which may extend into an actual extravasation of blood which, if it occurs in the brain, may result fatally. The punctate hæmorrhages are *always* brought on during violent fits of coughing, occurring in the conjunctiva, beneath the skin, or in the mucosa of the respiratory tract. Epistaxis is of frequent occurrence, is usually mild in degree, seldom prolonged, and ceases spontaneously. The epistaxis is generally the result of an intense venous congestion which finally distends the tissues to such an extent that rupture takes place. The hæmorrhage, purely mechanical as a rule, may be considered a safeguard of nature which may relieve the congestion, for the time at least, and avoid the opportunity of an extravasation of blood in a more serious location, for example in the brain tissues or meninges.

Although the theory is held by many that the infection in cerebrospinal meningitis comes through the nose, the bacteria penetrating the cribriform plate of the ethmoid, and although numerous diplococci have been found in the nose of a patient suffering from meningitis, nasal symptoms are rare in this condition. Epistaxis may occur, but it is more in the nature of an accident or is merely an incidental factor of no significance. The bleeding is slight and ceases by itself. Associated catarrh, as a rule, is absent. The inhibitory effects on the brain processes caused by the purulent meninges may extend to the centres governing secretion. The skin and the mucous membranes are dry. Spontaneous hæmorrhage from the nose does not take place, but cracks and fissures may occur in the mucosa which have a tendency to produce oozing until crusts form a protecting membrane. "Hæmorrhage from the nose, in cerebrospinal meningitis," says Rimbaud,[3] "is of favorable augury, representing a liberation of the organism from a certain amount of bacterial elements and their toxines. The value of the bloody discharge is still further increased by the close relations between the bloodvessels of the nose and of the meninges. Among twelve cases of cerebrospinal meningitis observed by the author, four patients had hæmorrhage from the nose, and this exerted a distinctly favorable influence upon the general condition of the patients. The bleeding was followed by a drop in the temperature, and rapid subsidence of all the meningitic symptoms. The four patients who bled from the nose all recovered without exception, whereas the eight cases without hæmorrhage included three deaths."

In the majority of cases the influenza bacilli select the upper respiratory tract as a favorable ground for infection. The local effects are distressing, but the toxæmia which is general is of far more importance to the patient. Even where there is an extremely acute coryza associated with influenza the tendency to epistaxis depends mainly on the individual susceptibility of the patient. In proportion to the number of influenza patients seen during a single year, nasal hæmorrhage does not

[2]Councilman, Mallory, and Pearce. Monograph. Boston, 1901.

[3]Rimbaud. *Gazette des hôpitaux,* 1909. No. 71.

occur often enough as an associated symptom to give rise to any remarks upon the subject. Whatever bleeding there is is not alarming. It is due more to the diminished resistance on the part of the patient than to the local condition.

It is a peculiar fact that the majority of diseases with which coryza is associated do not, as a rule, give rise to epistaxis. On practical grounds, it is hard to account for this seeming inconsistency. For example, nasal hæmorrhage is often lacking even in the most extreme cases of hay fever. Theoretical conjectures can easily be formed. Where there is an exudation of large amounts of serum and mucus, the probability is that the bloodvessels of the nares are not engorged but on the contrary, because of the unusual transudation which takes place, they are diminished in calibre. In other words, the transudate takes the place of the nasal hæmorrhage, in fact is blood minus some of its important constituents.

The epistaxis which occurs in some cases of acute lobar pneumonia is hardly a result of the infectious process but is due more to the increased pressure within the bloodvessels. As was stated before, it may be a life saving measure and on no account should an attempt be made to stop the hæmorrhage. At times there may be merely a diapedesis of red blood cells which may be likened to the red hepatization in the lungs. In the severer cases of pneumonia the lung action is so impeded that intense cyanosis takes place. A part of the oxygen remains in the hæmoglobin but much of the carbon dioxide is not eliminated so that methæmoglobin increases the cyanosis. A well known picture of the facies of the patient need not be presented here but with the dilatation of the alæ nasi, the heaving respiration, the cyanotic lips, the advent of an epistaxis should be hailed with joy. The old and time honored procedure of blood letting is still held in considerable respect in relieving the engorgement and pressure on the heart in acute lobar pneumonia. When epistaxis does occur it is but a natural process of blood letting and should as much as thirty cubic centimetres of blood be lost, the probability is that this depletion of the circulation will be decidedly beneficial instead of detrimental.

Erysipelas is essentially a constitutional disease with a local area of infection. Epistaxis does not occur as a result of the constitutional process but is more likely to be associated with the local process.

Erysipelas of the face, extending into the nares, may give rise to epistaxis but its occurrence is so rare that it is merely necessary to recall the possibility of the existence of such a condition.

The eruption in smallpox[1] is first seen on the face about the forehead and mouth and on the neck and wrists. In about twenty-four hours after its first appearance vesicles form upon the papules. Later they change to pustules. The mucous membranes are commonly involved. The lesions on the mucosa of the nose in the earlier stages of the disease may give rise to a hæmorrhagic condition. However, epistaxis is more likely to occur later on when pustules appear with crust formation. The amount of hæmorrhage may be moderate or profuse and is probably due to local changes in the nasal chambers, although the lowered vitality of the patient will naturally predispose him to lessened tissue resistance. If the disease progresses to the stage of disintegration of tissues as in black smallpox, the possibility of a dangerous hæmorrhage is very great as erosion of the larger vessels may take place. Clinically, as a rule, the general toxæmia of the patient carries him off before the local tissue changes come to a gangrenous condition.

Group II. Anæmias and other blood conditions:

a. *Anæmias.* 1. Secondary anæmia. Idiopathic hæmorrhages from the nose are of frequent occurrence in secondary anæmia. The causes of this condition are so numerous that it is hardly possible to state definitely to what the condition may not be due. In fact the term secondary anæmia is used to describe that state of the blood in which the red cells are proportionately reduced and more or less in a direct ratio to the loss of hæmoglobin regardless of the cause.

If one considers the circulation as an entity by itself which is liable to disease, he may regard secondary anæmia as a distinct disease. The blood flowing through the body and acting as the energy restorer to the debilitated organs, exercises a most important function, and the effect of the disease of the blood upon the organs it supplies is proportionate to the amount of loss of the substance with which it rebuilds up these organs with new energy. Naturally the whole body suffers and the anæmia of the brain, the muscles, the digestive organs, and the various mucous membranes is simply an expression to explain the devitalized condition of these various parts. Traumatism under the circumstances, however slight, is liable to have its effects increased and the resultant hæmatoma that forms ruptures easily and the hæmorrhage either moderate or profuse lasts a considerable length of time, both because of the inability of the capillaries to contract and because of the diminished coagulation power of the blood.

The nose being a protecting organ and frequently injured, therefore is liable to bleed on the slightest provocation if the patient has a secondary anæmia. The injury may be external as from a blow, or internal from picking the nose. In either case, even the slightest rupture of the mucosa may result in a bleeding which will sometimes last for hours, making it necessary to use innumerable measures to assist in its stoppage. Many people, of course, have secondary anæmia without ever having a nose bleed. The importance of recognizing that such a condition exists when a resistant epistaxis occurs is very great; for the prophylactic treatment against a return of the epistaxis must be directed toward the anæmia.

2. Chlorosis: Chlorosis, an anæmia of unknown origin, is characterized by a marked diminution of the hæmoglobin relative to the number of red blood cells. Occurring in young women mainly of a nervous type, ill fed and ill nourished, the disease, by some, has been considered a neurosis. Probably the

[1] Jackson. *Diseases of the Skin.* Fourth Ed., p. 601.

nervous element, per contra, is merely an expression of the devitalized condition of the blood.

The vitality of the blood depends upon its oxygen carrying properties, and so the number of red blood cells present is not of as much importance as the total amount of hæmoglobin they carry. In chlorosis, either the red cells are not capable of carrying the proper amount of hæmoglobin, or else the amount of hæmoglobin which is manufactured is not sufficient to meet the body needs. The end result is about the same as in a secondary anæmia. Epistaxis occurring in the course of a chlorosis presents essentially the same features as in secondary anæmia. The nasal mucosa has lost its resistance, and although idiopathic hæmorrhages may occur, in the majority of instances, the bleeding begins after some slight traumatism. When the chlorotic condition is once corrected, the tendency to nasal hæmorrhage is lessened.

Analogy may here be drawn between the gastric ulcer with its attendant hæmatemesis seen so frequently in anæmic and chlorotic individuals and the epistaxis which also occurs in these conditions. Granted that the anatomical structures and the physiological principles in the stomach and nose are not the same, yet the predisposition to hæmorrhage is a patent fact, there is the same blood condition, the marked diminution in acidity of the blood, the same devitalized state of the local site. The tendency to ulceration within the nose must be kept in mind and that such ulcerations have not been found more often may be due to our neglect in looking for them. An epistaxis arising from such ulceration may be difficult to relieve and treatment here again must be aimed against the underlying cause.

3. Pernicious anæmia. Pernicious or idiopathic anæmia, as first described by Addison, has recently been explained on a gastrointestinal basis. The blood picture, increased hæmoglobin and diminished number of blood cells, gives us a clue to the diagnosis. Here again, although the proportionate amount of hæmoglobin is increased, the total amount is far below normal. The gastrointestinal theory is yet to be definitely proved. There seems to be excessive hæmolysis within the liver. Small capillary hæmorrhages may occur. Internally these are not noticeable. But occurring in the nasal mucosa, a free bleeding may take place which, although not fatal, may be very distressing. Because of the difficulty of discovering the underlying cause, the disease is not easily held in check, and the patient dies from inanition or from some undiscovered primary disease.

b. *Hæmophilia.* This condition is more common than is generally supposed. It is hereditary, usually being transmitted through the female members of the family to the male children. The origin of the condition and the pathological changes in the body are not known. However, the fact that the patient is a bleeder is of great importance to the nose and throat specialist, as such a condition is a positive contraindication to any operative measures whatever. The condition has been explained on the basis that there are pathological changes in the smaller vessels which seem to be thinner and lacking in muscular tone. Other investigators assert that there is a diminution in the coagulability of the blood itself. The slightest traumatism may result in fatal hæmorrhage, and the bleeding from the nose seems to be particularly fatal. Out of 334 cases reported by Grandidier, 169 cases were epistaxis. Dr. Seymour Oppenheimer reported a case of hæmophilia in a woman, thirty-two years of age, where there was a profuse epistaxis, the blood coming in a steady stream, the hæmorrhage lasting for hours.[5] It is particularly important to us under these conditions, that careful inquiry should be made in every operative case as to whether there have ever been any "bleeders" in the family.

Leucocythæmia. Under this heading may be included the various forms of lymphatic leuchæmia—the two most common forms—splenomedullary leuchæmia and lymphatic leuchæmia. In both varieties decided changes take place in the blood itself, in the glandular structure, in the spleen and bone marrow. The differentiation of the two types is appreciated by a study of the blood and by the size of the spleen and the enlargement of the lymphatic glands. Various subdivisions of the leuchæmias have been made, i. e., the splenomedullary leuchæmia, Gauchier type, studied by Mandelbaum, Brill, and Libman. An ætiological factor for the disease has never been ascertained. As Osler says, " a tendency to hæmorrhage has been noted in many cases, and some of the patients have suffered repeatedly from nose bleeding." However, epistaxis is only one of the various hæmorrhages which frequently occur. It may be associated with hæmatemesis, hæmoptysis, extensive purpura, or hæmorrhages into the pleura and peritonæum. Hæmorrhage from the gums has been noted in some cases. Local gangrene may develop at any time, of course, with sloughing of the tissues and prolonged hæmorrhage.

The hæmorrhagic condition in leuchæmia is in all probability due to two factors. First, there is an alteration in the blood itself, and secondly, there is a diminution in the vitality of the tissues due to the lack of nutritive power of the blood itself. Given these two factors, it is natural that bleeding should take place from the *pars minoris resistentiæ.* As was explained before, the nose, on account of its anatomical structure is the part of the body with the least resistance. The hæmorrhage either ceases spontaneously, or else may be more or less continuous, depending on the vitality of the nasal mucosa.

All rules have their exceptions, and the writer has seen the worst destruction of tissue in a case of acute, lymphatic leuchæmia, not in the nose but in the gums of the lower jaw. The patient was a young girl who came to the hospital with all the symptoms of sepsis. An examination of the blood revealed the leuchæmia, but that in no way explained the constitutional symptoms. She was constantly expectorating a frothy, blood tinged mucus. Examination of the mouth showed a gangrenous gingivitis extending along the greater part of the alveolar border of the lower jaw. The bleeding from this part continued until death took place. There was no nasal hæmorrhage.

[5] Oppenheimer. *New York Medical Journal,* December 4 and 11, 1897.

However, an exception of this kind is readily explained. We have argued that hæmorrhage takes place in most instances from the least resistant part. That does not necessarily mean that because the nose is anatomically a poorly resistant part of the body that, pathologically, it need be so. In a case such as the one related, the poor condition of the teeth and gums may have set up a pathological process before the leuchæmia became manifest.

c. *Purpura hæmorrhagica.* This disease occurs mainly in young, ill nourished individuals. It is considered by some to be due to a rheumatic diathesis. After a few days of malaise, purpuric spots occur on various parts of the body. The bleeding from the mucous surfaces may be so severe and prolonged that an intense anæmia or death occurs. There is a variety of the disease called purpura fulminans which may prove fatal in one or two days. The most excessive hæmorrhage comes from the nose. Stringent measures may be needed at any time to check the hæmorrhage. Applications of escharotics make the condition worse. The proper packing of the nares is the only local measure that will cause relief.

Scurvy. The ætiological factors which bring about the condition called scurvy, either in the adult or in the infant, are not definitely known. Scurvy or scorbutus in the adult is not frequently seen nowadays, since it has been found that the addition of juices of fresh vegetables to the dietary is prophylactic against the disease. Gerrod states that scurvy is caused by the lack of potassium salts, while others, such as Ralfe, conclude that it is due to a deficiency of other important constituents of the blood. Whatever the primary ætiological factor may be, it is no longer a disputed fact that infantile scurvy is caused by improper feeding and the addition of orange juice, prune juice, etc., to the diet has rapidly cured any number of patients.

The pathological lesions in scurvy occur around the epiphyses of the bones, in the mucous membranes, in the lining membranes of the serous cavities, and in the skin. Hæmorrhages take place in these various parts with extreme tenderness of the bones and gums. The hæmorrhages into the mucous membranes are not confined to any one part. They may affect the mucosa of the conjunctiva, nares, mouth, pharynx, lungs, intestines, etc. They, in themselves, are seldom serious. Neither are the hæmorrhages into the skin. *Pari passu,* epistaxis occurs frequently in comparison with the other lesions.

The interesting question now arises why hæmorrhage from the gums is much more frequent than hæmorrhage from the nose in infantile scurvy, although in the scorbutus of adults, epistaxis occurs more often. I can only explain such an occurrence by the association of the hæmorrhages with the bone changes. The hæmorrhages in scurvy are mainly subperiosteal and seem to take place mainly near the growing centres of the bone, i. e., bones that are most constantly used or most liable to extreme physiological use. The growth of the maxilla, particularly the superior maxilla, is very rapid. There are five primary centres besides the centres for all the eruptive teeth. Irritation, therefore, occurs from without and within—the first from frequent feeding (and most of these cases are in artificially fed infants), and the second, from the irritation caused by the eruption of the teeth.

d. *Malaria.* Epistaxis in malaria is a rare complication and is seldom seen in the tertian and quartan fevers, which are common in this climate. There is such a condition known as pernicious malaria, in which there is often an exudation of hæmoglobin into the blood serum, caused by the breaking up of the red blood cells. In such cases a mucosanguinous discharge from the nose may occur. In the later stages of malarial cachexia, death may occur as the result of hæmorrhage. This hæmorrhage is not by any means confined to an epistaxis, but may be found in any of the serous cavities, skin, mucous membranes of the gastrointestinal tract, etc.

Osler[6] reported three interesting cases of a "family form of recurring epistaxis associated with multiple telangiectases of the skin and mucous membranes." Two of these patients belonged to a family in which epistaxis had occurred in seven members.

Group III. Circulatory diseases:

The diseases of the circulatory system in which epistaxis may occur comprise the majority of the serious diseases of the heart and bloodvessels. Among the heart diseases may be mentioned mitral stenosis, tricuspid stenosis, congenital cardiac disease, aortic insufficiency, and diseases of the coronary arteries. Among diseases of the bloodvessels are included aneurysm, arteriosclerosis (apoplexy and endarteritis obliterans). Cirrhosis of the liver and chronic interstitial nephritis, occurring in the majority of cases in connection with one of the foregoing group, may well be included among circulatory diseases. In fact, the first pathological alterations noticeable in either cirrhosis of the liver or interstitial nephritis often are in the regions of the smaller bloodvessels.

It is unnecessary for us to take each one of these diseases by itself and explain any relation epistaxis may have to it. They may be divided into two groups: 1. Those due to increase in connective tissue elements in both the myocardial and bloodvessels walls. 2. Those due to some pathological lesion of the heart valves or some congenital deformity of the heart, such as a patent ductus arteriosus.

1. In these cases the hardening of the arteries brings about a decided increase in arterial tension. The heart has to work with increased force and, therefore, any hæmorrhage taking place under these circumstances is very likely to be caused either by weakening of the arterial wall, or because Nature tries to find an outlet for the overfilled and weakened arteries. Epistaxis, which probably occurs more frequently under these circumstances than is supposed, is often overlooked. Some years ago the time honored process of blood letting in such diseases produced very beneficial results, and, as an epistaxis is but a minor blood letting, it probably accomplishes, or attempts to accomplish, some

[6] William Osler. *Johns Hopkins Hospital Bulletin,* November, 1901.

little good. In patients with hardened arteries, an epistaxis is considered a premonitory sign of apoplexy and it is a question whether, when such a sign occurs in such a person, it would not be a wise procedure to open up a vein and diminish the tension in the cerebral vessels. The same result was often accomplished by means of Junod's boots, which, on creating a vacuum, drew the blood to the extremities and away from the vital centres and the brain. The importance of watching the blood pressure in these cases of high arterial tension with epistaxis was brought out by Dr. Cocks at our last meeting in the patient he showed, where, when the vascular tension was diminished, the epistaxis ceased. It is my custom to take the blood pressure of every patient over the age of forty, as I have found that many of the affections of the nose and throat may be directly benefited by arterial dilators.

2. Epistaxis is a very common occurrence in patients suffering from congenital heart disease. In such patients, there is a polycythæmia or increase in the number of red blood cells and hæmoglobin. The blood may carry a normal amount of oxygen but contains an increased amount of carbon dioxide. Epistaxis in these patients is a grave occurrence, and the physician may have to exercise all his ingenuity to stop it. Whether such hæmorrhage is due to increased tension or due to some alteration in the blood itself remains to be seen. As a rule such patients seldom live beyond the age of thirty. I recall one patient, a boy of twenty, with a very peculiar heart affection, probably congenital, due to a patent ductus arteriosus and an open foramen ovale, who had frequent hæmorrhages into the bladder and frequently long standing attacks of epistaxis. I tried various astringents, cauterants, packings, etc., and oftentimes at the end of one or two days he felt better.

Another point to remember in these cases is that no operative procedures on the nose and throat should be attempted in these cases. Not all cases of heart disease present visible symptoms, and many patients with heart disease are not cognizant of the fact. Even operations performed under local anæsthesia may meet with disastrous results.

Group IV. Respiratory diseases:

The respiratory diseases with which epistaxis is associated include chronic bronchitis, emphysema, pleurisy with effusion, empyema, and tumors pressing on the lungs. Of course, there are many other respiratory diseases such as pneumonia and tuberculosis in which nasal hæmorrhage may, and sometimes does, occur. It is impossible to take up each group separately and give a definite cause for the epistaxis in each certain disease.

The nasal bleeding, as a rule, is due to one of two causes. First, at one time or other there is an increased pressure in the bloodvessels, possibly some cyanosis, and this in itself may be sufficient to cause a severe bleeding from the nose, the same as occurs in cardiac diseases. In such instances the bleeding may be considered of good import to the patient. Secondly, the epistaxis may result from the secondary anæmia, which is almost always associated with chronic respiratory diseases, during the interim, that is to say, when the attacks of cyanosis do not occur. At such times the loss of blood is a decided detriment to the patient.

Group V. Specific local inflammations:

Under this heading are included syphilis, tuberculosis, leprosy, and carcinoma. Epistaxis is not a frequent occurrence in any of these conditions until erosion goes on to such an extent that the pathological process finds its way into the larger bloodvessels. It is quite a remarkable fact to what an extent ulceration can go on, without hæmorrhage taking place. In all of these diseases crust formation follows the line of ulceration and prevents what would otherwise be a quick exitus of the patient. Most destructive lesions are met with, particularly in tertiary syphilis and cancer without dangerous loss of blood. It is also possible that here again the local protective agencies of Nature are brought into play, and that some local irritant or toxine increases the constriction of the bloodvessels and increases the coagulative properties of the blood.

Group VI. Miscellaneous diseases:

The two most important conditions here mentioned are vicarious menstruation and caisson disease. The former is one of the most familiar of the recurrent, periodic nasal hæmorrhages. The epistaxis meets a physiological necessity of a body in which the *via naturalis* is shut off. Apparently the recurrent menstrual period is not only connected with the sex organs, but is a part of the physiological activity of the female. In Dr. Oppenheimer's case of hæmophilia, the epistaxis would frequently take the place of the menstrual flow. Fricker reported a case of a girl who never menstruated but suffered profuse nasal hæmorrhage every six weeks, finally dying of exhaustion. Other cases have been reported by Sommer and Obermeier. Although vicarious menstruation may take place from various parts of the body, epistaxis is the most frequent form.[7] The amount of blood that is lost is usually very small, varying from a blood stained mucus to an actual extravasation of blood. The hæmorrhage is seldom severe enough to cause any permanent change in the organism and ceases spontaneously.

Caisson disease. The general impression is that in caisson disease epistaxis is a common symptom. Although numerous instances are on record of pathological changes in the various antra and in the middle ear, there are seldom pathological changes in the mucous membrane of the nose. Snell says that epistaxis or hæmoptysis occasionally occurs after exit from the compressed air; but he states that he has seen few cases, and, in fact, in phthisical patients who have suffered from hæmoptysis, he has never known an instance where this came on while the person was in the compressed air chamber.[8]

[7] Veit. *Handbuch für Gynäkologie.*
Bottermund. *Monatschrift für Geburtshilfe und Gynäkologie*, iv, p. 436.
Fliess. *Relation between the Nose and the Female Sexual Organs*, Benticke, 1897, Leipzig and Wien.

[8] Smith. *The Physiology, Pathology, and Therapeutic Effects of Compressed Air.*
Snell. *Compressed Air Illness.*

Group VII. Drug poisoning:

Phosphorus. Poisoning from this drug nowadays is not so common as it was formerly, when amorphous phosphorus was used instead of the crude yellow product, although poisoning by phosphorus by the ingestion of matches or rat poison is a more or less common occurrence. As few as from twenty to forty matches have caused death. From the taking of the drug as a medicinal agent, general symptoms of poisoning seldom occur. Among such symptoms of poisoning small hæmorrhages in various parts of the body are not unusual. "The absence of clotting in the blood may be a factor in hæmorrhages which are met with among the symptoms of the second stage, but the immediate cause of these is the fatty degeneration of the muscular coat of the smaller arteries throughout the body."[9] Mackenzie reports a case of profuse epistaxis in a case of phosphorus poisoning.[10]

Chloralamide. Poisonous symptoms from this drug are only observed after the ingestion of large quantities. Epistaxis is rare but sometimes does occur. It is probably due to fatty degeneration of the bloodvessels, the same as in phosphorus poisoning.

Salicylic acid compounds. Only in very large doses, or only in patients who are very susceptible to the drugs, are hæmorrhages noticed. Hæmorrhages from the uterus, nose, mouth, and intestines have been credited to the action of this drug, and in fact, nose bleeding has been said to occur in a considerable proportion of the cases tested with it.

My object in bringing before a body of specialists a subject of this kind, is to impress upon you the definite relationship that does exist between epistaxis and various constitutional diseases. In looking over the nose and throat literature on the subject, I have found few cases reported. General literature probably abounds in references to epistaxis, but as a rule, such references are neglected by the laryngologist.

In presenting this subject in a concise monograph, I have hoped to make it clear that the subject is well worth our attention. Perhaps it will make us better specialists by making us better observers of general medicine.

11 West Ninety-first Street.

ETHER.

Practical Administration.

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Subjects of practical application in medicine and surgery are presented with hesitancy for the reason that methods seeming to us most natural and practical may to others seem the opposite. But even though deductions drawn by men of large experience may differ from ours, nevertheless, mutual consideration of practical topics should prove to be a mutual benefit. It is not, however, the intention to try to make this paper a full dissertation on practical etherization, but to set forth a few points which seem to me most essential.

All of us have heard decried elaborate preparation of a patient about to receive an anæsthetic. Though we should endeavor to be not extreme in this regard, in my opinion proper preparation contributes vastly to the comfort and safety of the patient and to the satisfaction of all concerned.

Particularly is this true in regard to the regulation of the diet, and the securing of proper elimination. The last meal indulged in, preferably a light one, should not be allowed nearer than six to twelve hours before the operation. The custom, in vogue with some surgeons, of suggesting that the patient take a light repast two or three hours before, is bad, for few stomachs would in that time be found empty of food, even the most digestible. In such cases the danger during the anæsthesia of aspiration into the lungs of vomited stomach contents is ever present. The risk of asphyxia or subsequent aspiration pneumonia, in most cases, can and therefore should be avoided. But to err by the opposite extreme is also unwise, namely,—the withholding of liquids, even water, for the ten or twelve hours preceding. Why water should not be given when so soon the kidneys will be compelled to labor under the special stress of excreting an irritant substance, I am unable to understand. Therefore, forbid the taking of food but allow water in small quantities as frequently as desired.

Except when specifically contraindicated a thorough cleansing of the intestinal tract is of manifest advantage. The administration of a mild purgative one or two nights previous and an enema several hours before the operation is good routine. But an enema, improperly given as to method or too late as to time, may be productive of much annoyance during the operation.

The prophylactic hypodermic injection of atropine and of morphine or codeine, is generally an assistance though not routinely used in our cases. The injection should be given a half or one hour before, and the dose of the hypnotic need not be large. The latter seems to be of special value in those cases which will awaken to experience new found pain.

The simplest apparatus is the most practical and convenient for the administration of ether by the "open" or "drop" method. Ether, an inhaler, and a towel folded lengthwise are the essentials. Petrolatum, gauze sponges, a pus basin, tongue forceps, mouth gag, and the usual stimulants are at times necessary, and, if possible, should be at hand.

The ordinary Esmarch inhaler is perhaps as good as any, though one of the folding type, as the Schimmelbusch, may be more convenient. The covering of the inhaler should be as pervious to air as possible, several thicknesses of gauze being sufficient. Many thicknesses of even wide mesh gauze may soon become saturated with moisture and thus offer as much obstruction to the passage of air as an almost impervious cloth. Should the fear be entertained that the thin gauze will not break the drop, a small tuft of cotton may be placed on the thinner gauze to receive and dissipate the ether.

When folding the towel it is of advantage to fasten the open edge at several points. From the

[9] Cushny. *Pharmacology and Therapeutics*, third edition, p. 600.
[10] Mackenzie. *Diseases of the Nose and Throat*, 1884, ii.

original container, a grooved cork, and a wick of absorbent cotton or gauze, can be constructed as handy an ether dropper as one can buy. The cases are rare indeed in which the use of tongue forceps and like accessories are either necessary or advisable. The contents of the stimulant tray is of doubtful utility.

So much for the apparatus; now for the patient.

Care should be taken that the preliminary preparation of the site of the operation be not awe inspiring, but be made as simple as possible. In regard to clothing the main requisite is warmth. A gown opening down the back is sufficient, provided warm blankets are used as covering. The anæmic, the emaciated, or the aged would better have the extra protection a thick undershirt provides.

To provide against certain unfortunate contingencies arising, it should be the anæsthetist's constant aim to ascertain some essential facts by personal examination and inquiry. Better a little repetition than a dead or damaged patient. The removal of false teeth, rings, other constricting bands, the presence of stiff joints, nasal obstruction, etc., should be a matter of personal knowledge of the anæsthetist, and this knowledge will relieve him of the responsibility of many untoward results that might otherwise ensue.

The preliminary approach of the patient is made with two main purposes in view, first,—to gain the patient's confidence; second,—to gain facts by inquiry and examination which will enable the anæsthetist to most intelligently administer ether to this particular subject.

Has the patient been previously anæsthetized? In what way were his sensations disagreeable? He should then be told in what way endeavor will be made to obviate those features by modifying the method of administration. The most frequent complaints are of sudden exclusion of air and too rapid pushing of ether, giving rise to smothering sensations. Or perhaps this is the first experience of the patient as a subject of anæsthesia. If so, it is unwise to be too explicit in regard to the unpleasant effects of ether. There frequently are none. Show him the inhaler. Explain that even when the ether seems very strong he is sure to obtain air in plenty. Tell him to lie quietly, breathe naturally, and he will soon notice his extremities are tingling.

Meanwhile proceed with the examination of the heart and lungs, evincing at no time hurry, but showing thoroughness, so that the reassuring words you give the subject may carry conviction. It is desirable also that the anæsthetist is cognizant of the condition of the urine. As rapidly or deliberately as circumstances necessitate the preliminary examination is completed and the patient prepared for etherization.

With body warmly covered the patient lies in the dorsal position, arms at sides, and head as low as conformation of the neck and shoulders permit. In other words the head should be lowered so that the depressor muscles of the lower jaw just lack tenseness, which position must not cause in that particular individual excessive backward tilting of the head.

Preparatory to placing the inhaler over the nose, a little petrolatum is smeared over the lips, nose, and adjacent skin surface. Over the eyes are placed several thicknesses of gauze and over this an end of the folded towel, the gauze protecting from the vapor and the towel being an effective barrier to the liquid itself. Personally I prefer to place the inhaler immediately on the face, though in some cases it may be desirable to start with it several inches above and gradually lower it. One advantage the former method possesses is that, while but few object to the inhaler on the face at first, the attempt to lower it later may cause protests from the patient, and another advantage appealing much to me is that by it the hand which steadies the inhaler is likewise immediately available to take the pulse and to gently control movements of the head.

With a few reassuring words, not omitting the admonition to take deep breaths, the first drop of ether is allowed to fall, in fifteen to twenty seconds another, in ten more another, then another, gradually decreasing the interval between drops until they are falling in a continuous stream. The rapidity of the increase of ether stream will be varied according to the character of the individual and the reflexes excited.

Coughing, choking or swallowing will generally promptly cease on stopping the drop for a moment and, on resuming, making a more gradual increase. By the time the ether is falling in a steady stream unconsciousness will generally supervene. Then the towel may be gradually folded around the mask so as to partially exclude the air. Then to prevent the increased ether content of the inspired mixture causing spasm or reawakening reflexes additional ether should not be poured for a moment or two when it should be given as freely as possible to full anæsthesia.

There are but a few subjects in whom it is not of advantage to turn the head to one side and to keep it in that position throughout the anæsthesia. In this way accumulated mucus and saliva are easily drained from the mouth and nose, and it is seldom necessary to hold the jaw forward, but, if necessary, this is accomplished with the minimum of fatigue to the anæsthetist and of soreness to the patient.

Though marked deepening of the respiration may precede, be synchronous with or follow whatever emotional excitement there may be, at any rate it is generally indicative of the early accomplishment of surgical anæsthesia.

Emotional excitement is very mild or entirely absent in all but a small percentage of cases anæsthetized by the drop method. Aside from the confidence inspired by the anæsthetist, this is due, I think, to the admission of air in plenty, the gradual increase of ether, and the absence of complicated apparatus. The ostentatious preparations to hold the patient, mental tension excited by too full and frequently foolish explanations by laymen, nurses, or physicians, and largely the too early restriction of the air supply, are frequent causes of excitement.

The state of surgical anæsthesia is at this stage generally easily attained with the full muscular relaxation pertaining thereto. But in a few subjects good muscular relaxation, though attained finally, is much delayed. In such cases to endeavor at all hazards to secure it quickly may result unfortunately. Most such will become completely relaxed

if the ether is but gradually increased and a little more time allowed for full effect. If the immediate preparation of the site of operation is proceeded with, such cases will frequently be found ready for the surgeon when the time for the incision arrives.

Indeed, in practically all cases, ether being the anæsthetic, I consider it would be advisable to initiate such preparations as soon as possible, and occasionally in selected cases, before unconsciousness is lost in some subjects whose state of mind will permit, provided there are neither unpleasant nor painful procedures involved. Thus the patient is ready for the operator sooner, not only because the paralleling of the initiating of the anæsthesia with these preparations saves time, but because stimulating to deeper, fuller respiration obviates the period of "subanæsthesia" which occasionally intervenes.

In this subanæsthetic state, really a state of true "simple surgical anæsthesia," the patient unquestionably in good condition, lies quietly, breathing regularly, but on the first attempt at surgical procedure will be found in anything but a quiet relaxed state. Unless there is some outward active stimulation this state may continue for some minutes.

But we must not lose sight of the fact that between the time of starting the ether and the attainment of at least a slight grade of anæsthesia the slighest outward stimuli *may* be productive of annoyance. Simple manipulations such as removing a pillow, grasping the arms forcibly to hold them, or changing a blanket, may cause undue excitement, spasm of the jaw and larynx, holding the breath, etc. Taking the foregoing fully into consideration, everything should be in readiness to proceed with the necessary manipulations the moment the proper depth of anæsthesia has been achieved.

The pupillary and conjunctival reflexes are of immense value to the anæsthetist, but the state of anæsthesia should be judged by the general appearance of the subject rather than by the separate or distinct observation of either the eye, the pulse, the respiration, or the presence of cyanosis or stertor. Close observation is essential, but without real value unless coupled with the ability to properly interpret. Likewise, frequent and accurate observations of pulse and respiration are necessary, but for the anæsthetist to shift his attention to record these during administration is a practice to be condemned.

Within a reasonable limit, quality, not rate, is the pulse consideration; and depth, not rate, of the respiration. As to the pupil, use it more as an arbiter when necessary to decide between two seemingly opposed factors, or to decide the importance, when otherwise all seems well, of the presence of certain conditions, as cyanosis, stertor, continued rigidity, or an increasing rapidity of pulse, or shallowness of respiration.

As the patient passes into the state of deeper anæsthesia, the desire should be to preserve that state which best serves the purpose to be accomplished by drops of ether just at the proper interval. There seems to me but little defense for the method, still advocated by some, of attaining a very deep state of anæsthesia, then withdrawing the ether and giving no more till there is a return of reflexes, when the subject is again "soaked." Likewise pernicious, it seems to me, is the continued giving of ether to excess. Unless the patient present alarming symptoms no one but the anæsthetist is capable of judging the degree of extra anæsthesia that is being maintained. To strive to maintain the desired state by the exhibition of the smallest possible quantity of ether should be the purpose in every administration.

Excessive doses may result seemingly in nothing more alarming than the continuance of unconsciousness several hours after the need for it has passed. But it will hardly be gainsaid when I suggest that this is not a result to be striven for, and there seems to be a close relation between excessive dosage and postoperative or postanæsthetic shock.

During the administration there is a number of indications which may suggest that a lighter dosage is advisable, but none is infallable, since any one may be due to unusual susceptibility or physical malformation. The most important of these are stertor, pallor or cyanosis, extreme muscular flaccidity, slow or rapid and shallow breathing, and a rapid feeble pulse. The sudden appearance of any one of these factors may be of serious moment, and in most cases the anæsthetic should be withdrawn for the time being at least.

But on the other hand the presence, to a slight degree, of any one factor throughout the anæsthesia or its occasional intervention may portend nothing. For instance, the presence throughout of stertor or a slight degree of cyanosis need not alarm unduly, but should certainly cause increased watchfulness since its presence is always indicative of obstruction to the passage of air, though such interference may be exceedingly slight. Many of the more plethoric exhibit cyanosis from the initiation and throughout the anæsthesia without apparent significance, but in the arteriosclerotic cyanosis is apt to be the precursor of danger. Of especial importance in all such cases is the dictum to give the "minimum amount of ether necessary to attain the desired end."

Respiration simply rapid, say 30 or 40, need seldom be viewed with gravity, but not so any irregularity of rhythm or extreme shallowness,—such qualities should always be viewed with suspicion. Likewise a marked change in the quality or rate of the pulse is important. It might be well to remember, in this connection, that preceding the return of reflexes with accompanying vomiting there may be an apparently unexplainable change for the worse in the pulse. As before said it is in such cases that reference to the eye is of much value.

Embarrassed or arrested respiration is the most frequent of the accidents of etherization. Generally the cause is the occurrence of mucus, nasal, buccal, and pharyngeal, but seldom bronchial. The theory has been advanced that this increase of mucus and salivary secretion is due, not so much to the irritant effects of ether, as to the influence it has in lowering the temperature of the inspired air. With that in view the administration of the warm vapor has been tried with good results. The prophylactic hypodermic injection of atropine seems to serve a good purpose in many cases. When excessive secretion is present, keeping the head on one side may obviate its dangers.

Laryngeal spasm may be avoided or be generally overcome without difficulty in the initial stage by

the free admission of air. But the occurrence and recurrence of this spasm during deeper anæsthesia may be prophetic of trouble. In such, air should not be restricted and ether very cautiously given. If the free admission of air does not overcome the spasm, the jaws should be pried apart and the tongue forcibly drawn forward. I will not in this paper otherwise consider respiratory failure except to say that even under ether it is rare and the best insurance against its occurrence is careful administration.

After the operation is over and the ether withdrawn, the management of the case continues to be of vital importance. Some one should remain with the patient until he is rational. The room should be darkened and quiet. A dry gown and warm bedding should be provided. Liquids may be allowed early. Should there be great thirst, the result of excessive vomiting, salt solution by rectum will relieve. The subsequent diet should be governed by the nature of the operation, permitting a full diet as soon as the best interests of the patient allow. To secure good evacuation of the bowels after the third day, use any means consistent with the treatment of the individual case. A mild diuretic is prescribed by some; certainly the free drinking of water should be encouraged.

Omitting the full consideration of postanæsthetic shock and pneumonia, we will take up briefly some of the unfortunate after effects of etherization.

Much has been written of the so called ether pneumonia. But the majority of the cases of pneumonia following etherization are not due to the drug *per se,* but some result from exposure during or after the operation, or from the aspiration into the lungs of vomited food particles; and these cases should not occur at all, if there are careful preparation before and watchfulness during and after the anæsthesia. Most of those cases due to ether itself arise in adynamic subjects which have been "soaked." Yet very rarely does pneumonia appear when no exciting cause other than the ether can be demonstrated.

In conclusion let us consider what seems superficially to be the *bête noire* of surgeon, patient, and anæstheist, namely, postanæsthetic nausea and vomiting. A surgeon manipulates the cæcum, removes the appendix, squeezes the gallbladder, and pulls up the tubes and ovaries to examine them, each procedure being perhaps justifiable, yet, undoubtedly, they are responsible in some degree for subsequent nausea. And even these patients, under ether, frequently are observed to have but little nausea, and only the first or the reflex vomiting.

Yet even we lovers of ether must acknowledge the too frequent presence of nausea and vomiting due seemingly to the ether itself. This is more probably caused by the collection in the stomach of the products of mucous membrane irritation elsewhere than by either the direct or reflex effect of ether on the stomach. Many times the mucus and saliva drain into the stomach as into a reservoir, to be vomited just previous to the return of consciousness. The saturation of this fluid with the ether increases its irritant quality many fold. After the primary vomiting which empties the stomach of this there is frequently no further vomiting or complaint of nausea, whereas in some such cases in which vomiting does not occur nausea may be lingering and severe. To induce vomiting or to wash out the stomach with the tube will relieve in most of these latter.

The fear of these conditions should not cause unnecessary delay in administration of liquids after the recovery of consciousness. With due consideration given to the character of the operation and the general condition of the patient, the earlier the administration of liquids in graduated quantities is begun, the better.

Several points emphasized before will do much toward lessening the tendency to or even obviating nausea and vomiting. These may bear repetition now,—proper previous diet, thorough bowel elimination, mental preparedness, gradual induction of anæsthesia, assisting drainage of the nose and throat by the lateral position of the head, and finally the administration of the minimum amount of ether necessary to attain the desired state of anæsthesia.

606 Massachusetts Avenue, N. W.

OBSERVATIONS ON THE TREATMENT OF PERITONITIS.

Report of Twenty-nine Cases of Appendiceal Origin.

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Until recent years the percentage of deaths following operations for gangrenous, perforated, or suppurative appendicitis with peritonitis was so large that the recovery of these cases was looked upon as depending almost entirely upon the personal resistance of the patient together with a reasonable amount of good fortune. Death in these cases generally occurred in from twenty-four to seventy-two hours, and was either due to the already existing peritonitis caused by the appendix lesion, or one which developed from infectious material disseminated throughout the abdomen during operation. The advent of increasing technical skill, a better knowledge of the pathology of this condition, and the recognition of peritoneal resistance caused a gradual diminution of the mortality rate of these cases. This is exemplified by the statistics of Mikulicz, which show a decrease of from ninety-seven per cent. to forty-three per cent. of deaths.

The era then followed in which free flushing and thorough cleansing of the peritoneal cavity was employed, and many surgeons recognized this as the best form of treatment. The medical literature was filled with reports and statistics of cases of peritonitis treated in this manner and showed the mortality to be considerably lower than in cases treated previous to this time; still the death rate was comparatively high.

As early as 1898 Carl Beck (1) reviews his treatment of these cases as follows: "The peritoneal cavity is washed with a hot saline infusion, the fibrinous flocks are wiped off carefully, and extensive drainage is effected by use of iodoform wicks." He furthermore reports that at that time he con-

sidered those cases fatal in which there poured forth a serous exudation of fæcal odor upon incising the peritonæum.

L. W. Hotchkiss (3), in 1906, reported three series of cases divided as follows: First series, twelve cases from 1895 to 1899, treated by "free opening, more or less evisceration, saline irrigation, and drainage," eleven patients died. Second series, fifteen cases, treated by "rapid removal of appendix, free irrigation of pelvis and lower abdomen with hot normal saline, and closure of wound down to a small cigarette drain which led to pelvis and appendiceal site." No deaths. Third series, twenty-eight cases from 1902 to 1906, in which pelvis and lower abdomen were washed out with Blake tube. peritoneal cavity not drained, five patients died. A comparison of the results of the treatment in the second series of fifteen cases with no deaths, with the third series of twenty-eight cases with five deaths, forces us to the conclusion that the drainage cases have an apparent advantage.

The mortality rate in the Massachusetts General Hospital (4) for a period of five years in 161 cases of general suppurative peritonitis of appendicular origin was sixty-six per cent.

In 1906 Franz Torek (7) reported eighteen cases of peritonitis with three deaths. In 1908 he reported eighteen more cases with the same mortality rate, in all thirty-six cases with six deaths. The technique as advocated by him was in general as follows: The abdomen was opened, the pus was allowed to flow out or was dipped out with a gauze swab, the appendix removed, and the entire peritoneal cavity flushed with large quantities of saline solution. This flushing was accompanied by an actual washing of the intestines aided by a "rocking motion with the hands." The abdomen was then completely closed without drainage. The mortality of his patients treated by this method was lower than in the cases previously quoted, but this would hardly be sufficient for establishing a precedence of not draining suppurative peritoneal cavities when the absolute surgical rule in the treatment of all other pus cavities, *is* drainage.

Harte and Ashhurst, as quoted by Murphy (5), collected a large number of cases of typhoid peritonitis of which 200 odd are herewith tabulated. These show the use of the different steps of the operations in relation to the mortality.

	Cases.	Recoveries.	Died.	Mortality per cent.
Drainage, no wiping or irrigation	17	10	7	41
Wiping and drainage	31	12	19	61
Irrigation and drainage	176	46	130	74
Wiping, irrigation, and drainage	11	1	10	90

Murphy calls attention to the fact that in these cases each additional step in the operation has caused the mortality rate to increase from fifteen to twenty per cent. The general opinion from the recent literature on the handling of these cases, is to do as little as is consistent with properly handling the seat of the lesion and then "letting well enough alone." Hence, if drainage is sufficient, it is evident that wiping, irrigation, and the handling which these procedures necessitate, subject the patient to a prolonged anæsthesia, lowers resistance, and increases the danger of shock. This in itself would be sufficient to increase the mortality rate to a marked degree.

Having briefly reviewed the results of the various methods of treatment prior to the introduction of the Fowler position and Murphy method of proctoclysis in the handling of peritonitic cases, I wish to report the results in twenty-nine cases of appendicitis with diffuse peritonitis treated in this manner in St. Mark's Hospital from May 1st to November 1st, 1909.

These cases consisted of nineteen males and ten females, of which eight were under twenty years of age, sixteen between twenty and forty, and five between forty and sixty-five. Only those cases with a diffuse peritonitis are included in this series, those with local peritonitis or walled off abscesses not being mentioned. The patients were all admitted as acute cases and most of them were operated upon at once. The cases successfully terminated with no deaths.

Treatment: The treatment depends upon the following as expressed by Munro: "Early and direct attack of the infection, minimal disturbance of the surrounding tissues and intelligent after care." The abdomen was opened by incision directly through the right border of the rectus, appendix located, ligated and removed. Intestinal contents or pus in the peritoneal cavity was allowed to flow out through incision and was mopped up with gauze sponges. The gut was handled as little as possible. Drainage, consisting of either loose cigarette drains, fenestrated rubber tubes with wicks or ordinary gauze, was instituted and then the abdomen was closed around the drains. All this proceeded as rapidly as possible and then the patient was put to bed in the Fowler position. This position may be attained by raising the head of the bed and allowing it to rest upon the arms of a large chair, if no apparatus is at hand for securing and maintaining it. This keeps the head of the bed raised to an angle of forty or forty-five degree and answers very well for all practical purposes. The patient was kept in this position from two to six days. The removal of the drains was begun on about the third day, which process was gradual, so that if the progress of the patient was good, the drains were all out in about one week.

The importance of maintaining the patient in the Fowler position cannot be overestimated, as this is the only means by which the pus and toxic products in the peritoneal cavity are kept in the pelvis, where the absorptive powers of the peritonæum and lymph glands are much less than at the diaphragmatic region. Warbasse reports that the absorption of septic products is remarkably active in the region of the diaphragm, even though the existence of stomata in the diaphragm, through which absorption may take place, have never been absolutely established. Fowler (2) states that "the elevated head and trunk posture is employed because it lessens the normal intraperitoneal wave toward the diaphragm and hence lessens the rapidity of absorption of septic products. These facts plus the presence of the pelvic drain for removal of the products which gravitate toward the pelvis when the patient is elevated amply prove the value of this position as a factor in the treatment of peritonitic cases."

As soon as the patient is put to bed, a proctoclysis is begun employing the continuous drop method (Murphy method). The giving of a proctoclysis in this manner is one of the simplest of procedures,

but if all the details are not taken into consideration, failure will result. An ordinary hospital enema can be used as the receptacle for the saline solution, this being isotonic and at a temperature of from 100° to 110° F. The tubing leading from the can may be of the common variety in use with such cans, and should have a hard rubber vaginal douche tip with multiple openings attached at its end. This tip should be bent to almost a right angle about 3 inches from the point. If a straight douche nozzle is used while the patient is in the Fowler position, the tip impinges on the posterior wall of the rectum. This irritates the lower bowel to expel the fluid and so renders the proctoclysis valueless. The nozzle is inserted into the rectum up to the angle (three inches) and can be held here by adhesive strips fastened to the thigh. The rubber tubing attached to the nozzle is passed along from the anus toward the head of the bed, from which the can containing the normal saline solution has been suspended. In his original description of this procedure, Murphy advised suspending the can at an elevation of from six to fourteen inches above the level of the buttocks and then either raising or lowering it, so that the water pressure alone should control the rate of flow, which should go into the rectum drop by drop. In our experience, the can suspended from a height of six inches above the level of the buttocks, has been ample for this rate of flow. The tubing leading from the can to the rectum must be absolutely unencumbered, i. e., there should be no clamps or constrictions of any kind. The object of this is to allow a free forward and backward flow from the can to the rectum and vice versa. This is a point in the technique which is absolutely necessary for the success of the procedure. If the tube is constricted in any way, any increase of intraabdominal pressure, as in vomiting, or attempting to pass flatus, causes the fluid to be expelled into the bed, while if the tubing is free it rapidly runs back into the can. There is about one pint or one and a half pints of saline absorbed every hour when given in this way and this necessitates replenishing it each hour with fresh hot solution. If this reserve stock of saline is kept a little hotter than required in the can, the addition of it each hour to the can will keep the saline that is being given at the right temperature for administration, about 100° F. The maintenance of this proper temperature may also be brought about by surrounding the can with hot water bags.

The proctoclysis should be continued from one to three days or until the toxic symptoms disappear, and during this period in severe cases the nozzle need never be removed from the rectum. In our cases, while the proctoclysis has been kept up for three days or more, we have not, as a rule, given it continuously during this time. Our method has been to give it for two hours and then discontinue for one or two hours, continuing this alternately for two or three days as may be necessary. By this alteration we have been able to avoid expulsion of the proctoclysis in those cases with an irritable rectum and have also avoided "water logging." This occasionally happens in a continuous proctoclysis, the patient absorbing more saline than can be accommodated. It is manifested by puffy eyelids, full pulse, frequent urination, and profuse sweat, and calls for a temporary stoppage of the administration of the proctoclysis. The intermittent method of administration, as practised in our cases, entirely prevents this condition. If this technique is carefully carried out, only success can result, and if the fluid is expelled or any hitch whatever takes place, it is only because the details have not been carefully followed.

The value of an absorption of so large a quantity of fluid is easily seen, it decreases thirst, supplies fluids to the tissues, increases capillary tension, promotes excretions, and dilutes the toxines. This makes it the most valuable adjunct in the post operative treatment of peritonitis.

Although of not so great importance as the proctoclysis, I wish to call attention to a few drugs we have used in aiding us to successfully combat this condition.

1. Camphorated oil, used hypodermically, from fifteen to thirty minims, every two or three hours, or oftener if necessary, we have found of infinite value as a cardiac stimulant, pending the absorption of the fluid from the proctoclysis, and at all times when there were any signs of cardiac weakening.

2. Intravenous saline infusion, from 500 to 1,000 cubic centimetres, with adrenalin, ten minims, injected with a hypodermic syringe into the rubber tube leading to the vein, after the manner described by Crile, is the most powerful agent for combating shock before, during or after operation.

3. Eserine salicylate, used hypodermically, 1/60 grain, every four hours, for four doses, following operation, is often of great value. This drug stimulates the involuntary muscle of the intestine, aids in the expulsion of gases, and is of some value in the prevention of adynamic ileus, which occurs in peritonitis due to pareses of the gut. We have used this drug for only four doses, because our experience has shown us that this was sufficient to get the required action. In some cases, however, eserine seems to have no effect whatsoever, but it is always worthy of a trial.

When ileus occurs the treatment depends entirely upon the diagnosis. If of the adynamic type and vomiting is present, gastric lavage should be practised freely and medicated enemas should be given to stimulate the lower bowel. Of the medicated enemata we have obtained the best results with the carminative enemas with magnesium sulphate or with alum, half an ounce to a quart of water, given very gradually into the rectum. If the condition persists in spite of all treatment there is only one recourse or enterostomy for drainage. If the ileus is mechanical and not adynamic prompt surgical intervention is the only solution of the problem.

While this description of the postoperative treatment of peritonitis was drawn from cases of appendicular origin, the Fowler position and Murphy proctoclysis is applicable with equal value in peritonitis of any origin with the exception of that form of peritoneal invasion due to puerperal sepsis. Here it is not nearly so efficacious because of its pathology. In the puerperal variety the infection is introduced from without and invades the subperitoneal tissues of the pelvis, causing a virulent pelvic cellulitis and lymphangeitis as a preliminary to the peritonitis. When these tissues are infected the toxic material cannot be drained by incision, as the infec-

tion is confined to the cellular tissue, hence opening and draining of the peritoneal cavity is of no great value. We have, however, had several cases of puerperal sepsis which entirely recovered and in all these cases the proctoclysis was part of the routine treatment. While the number of these cases is too small for a detailed report, still its value as a part of the treatment can hardly be doubted.

With the kind permission of Dr. Carl Beck, I append a description of five characteristic cases taken from our series of twenty-nine, quoted before. These will illustrate the various stages of the condition, from six to seventy-two hours after the peritoneal involvement.

Case I. L. G., age twenty, male, admitted May 3, 1909, 9 p. m. Temperature, 101° F.; pulse, 68; respiration, 30. Patient complained of general abdominal pain. Operation May 4th, 1.40 p. m., temperature, 103.8° F.; pulse, 68; respiration, 28. Appendix was found to be gangrenous, long, and adherent by its tip to the bladder. There was a general involvement of the gut by direct extension from the appendix, with seropus among the intestinal coils. The appendix was carefully separated from the bladder, ligated, and removed. Cigarette drains to appendicular stump and behind the bladder were employed. Patient was put to bed in Fowler position and given a Murphy proctoclysis. Eserine salicylate, 1/60 grain, every four hours for four doses were given hypodermatically. Patient had an uneventful recovery. Bowels moved on May 10th and Fowler position and proctoclysis were discontinued. Temperature was now, 99; pulse, 86; respiration, 22. Drains were all out by May 11th, patient out of bed May 14th, discharged on May 23rd, entirely well.

Case II. M. M.; age sixty-one, male, diabetic, admitted May 17, 1909. Temperature, 106.4° F.; pulse, 118; respiration, 38. Abdomen tremendously distended and tender—operation shortly after admission. Incision through right rectus, appendix gangrenous, small amount of free fluid present in abdomen, intestines congested and distended. Anæsthetic was poorly taken by the patient and during spasmodic coughing therefrom, great difficulty was experienced in preventing the patient from eviscerating himself. The appendix was ligated and removed with considerable difficulty owing to the extreme friability of the tissues. Drainage to appendicular site and to the pelvis was instituted. Operation lasted forty minutes. Patient put to bed in Fowler position with a proctoclysis. Eserine salicylate given, 1/60 grain every four hours, for four doses, hypodermatically. Temperature after operation was 103° F.; pulse, 100; respiration, 32. Following operation patient steadily improved, proctoclysis discontinued after second day, drains entirely removed at the end of a week. No bowl movement until May 21st (four days after operation) following calomel and magnesium sulphate and enema. Recovery uneventful except for slight bronchitis following anæsthetic. Patient discharged June 4, 1909.

Case III. J. G., age eleven, male, admitted May 19, 1909, 5 p. m. Diagnosis appendicitis. Slight distention, pain only on pressure in right iliac region. Temperature, 98.6° F.; pulse, 120; respiration, 32. Operation at 8.30 p. m. Incision through right rectus, appendix found perforated and intestinal content leaking into general peritoneal cavity. This was carefully swabbed out with gauze sponges, and appendix was ligated and removed. Cigarette drainage was instituted to appendix stump and to pelvis. Patient was put to bed in Fowler position with a proctoclysis. After operation, temperature, 100.2° F.; pulse, 108; respiration, 30 and never went any higher. A natural bowel movement occurred on May 19th (third day after operation), and the Fowler position and proctoclysis were discontinued. Drains were all out in a week, and patient was discharged on the thirteenth day after operation having had an absolutely uneventful recovery.

Case IV. Mrs. I., age thirty, admitted July 7, 1909, at 2.30 a. m. Temperature, 100.2° F.; pulse, 110; respiration, 30. Abdomen tender and distended. Operation at 3 a. m. Appendix gangrenous and sloughing. Fæcal odor as soon as abdomen was opened with considerable bad smelling seropus present among the intestines which were distended and congested. Appendix ligated and removed, cigarette drains to appendicular site and to pelvis. Patient put to bed in Fowler position with a proctoclysis. Fowler position maintained until July 10th. Proctoclysis given intermittently for about sixty hours then entirely discontinued. Until July 10th, patient's temperature was always between 100° F. and 102° F.; pulse between 86 and 110. Bowels moved on July 10th after the administration of calomel and saline. Drains entirely removed on the sixth day. Patient discharged July 20, 1909.

Case V. I. M.; age three and one half, male, admitted July 12, 1909, at 1.20 p. m. Temperature, 103.6° F.; pulse, 160; respiration, 32; abdomen very tender and distended, patient restless with anxious expression on face. Operation at 2.30 p. m. Abdomen opened through right rectus, free purulent fluid was found throughout the abdominal cavity. Appendix was gangrenous, intestines congested, distended, and covered with a fibronecrotic membrane. Appendix was ligated, removed, and extensive gauze drainage instituted. Patient put to bed in Fowler position with proctoclysis. On evening of operation temperature was 104° F.; pulse, 166 and intermittent; respiration, 40. Patient remained about the same with the exception of a slight fall in temperature until the following night (thirty-six hours after operation) when the temperature went up to 105.4° F.; pulse, 164 and intermittent; respiration, 38; patient delirious. In addition to the proctoclysis which was being given, camphorated oil, five minims every two hours hypodermatically, and whiskey, half an ounce to four ounces of water in drachm doses, was now added to the treatment. Toward the morning of July 14th patient quieted down, fell asleep, and on awakening was much improved. Following this the bowels moved, and at noon the temperature was 100° F.; pulse, 128; respiration, 30. Patient now slept at intervals and was given small quantities of albumin water as nourishment. Improvement was steady, stools became more frequent, proctoclysis discontinued after three days, and drains all removed by the seventh day. On July 15th temperature was down to 99.2° F.; pulse, 128; respiration, 24. Patient discharged on August 15, 1909. The discharge from the hospital was delayed by the fact that the sutures of the abdominal wound all became infected from the drainage and secondary suture was necessary.

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THE MUNICH PSYCHIATRIC COURSE OF 1909.

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In 1907 Professor Kraepelin established a postgraduate course of psychiatry, which was practically the only one of its kind in the world. It met with such a tremendous success that he deemed it advisable to hold such a course every autumn.

The third postgraduate course of psychiatry was started on the 26th of October, 1909, at the Munich

Psychiatric Clinic. The entire term was three weeks, and the lectures began about 8:00 o'clock in the morning, (some at 9:00) and ended at 6:00, and at times at 8:00 p. m.; only two or three hours intermission during the day were allowed. Lectures and demonstrations were given on psychopathology, anatomy, and pathology of the nervous system, clinical neurology, serum diagnosis, and examination of cerebrospinal fluid. The teaching staff consisted of Professor Emil Kraepelin, Professor Alzheimer, Professor Liepmann, of Berlin, Professor Kattwinkel, Dr. Broadmann, of Berlin, Dr. Weiler, Docent Isserlin, Docent Plaut, and Docent Rüdin.

The participants of the 1909 course were about seventy physicians, who have done considerable work in psychiatry in various hospitals and clinics for the insane. Several professors and instructors of some of the European and American universities were among the members of the class. The following nationalities were represented: United States of America, Canada, England, Sweden, Russia and Poland, Austria and Hungary, Germany, Spain, Portugal, Italy, and Turkey. The Americans, next to the Germans, were in the majority.

Professor Liepmann gave ten interesting lectures on aphasia, apraxia, and agnosia. The entire ground of aphasia was covered in the light of modern research, and special reference was made to the following points: Anarthria and its distinction clinically and anatomically from motor aphasia, sensory and motor aphasia; paraphasia and jargon; bilateral temporal affection; subcortical aphasia; Marie's theory; anatomical localization of speech centre. Several interesting cases of aphasia were presented and examined before the class. Numerous charts, pathological and anatomical specimens were illustrated with the projection apparatus. In this brief communication it would be impossible to outline Professor Liepmann's views on aphasia, but suffice it to say that he accepts specific cortical localizations for speech, and rejects both Marie's theory and von Monakow's diaschisis. The reader is referred to Professor Liepmann's original article in Hans Curschmann's *Lehrbuch der Nervenkrankheiten.*

Professor Kraepelin's fifteen demonstrations were on atypical and rare cases of mental diseases. He also dealt with important problems which confront us to-day in our clinical work. Five interesting cases of juvenile paresis between the ages of seven and eighteen years were presented. The characteristic features of juvenile paresis were fully emphasized: 1. Marked dementia; 2, absence of grandiose ideas; 3, a relatively long duration; 4, epileptic attacks; 5, a marked alteration of character; 6, frequency of the Babinski reflex.

It is well known that of late the Munich school has assumed a different attitude toward manic depressive insanity, and Professor Kraepelin took the opportunity of demonstrating a large number of cases of depression and excitement, in which formerly the diagnosis of manic depressive insanity would not have been considered. The following table will serve as an illustration of the cases presented and discussed:

Number of cases.	Nature of psychosis.
4	Manic depressive insanity (depression) in old age.
1	Manic depressive insanity (depression) in middle age.
1	Depression (related to manic depressive insanity) in a young woman of twenty-one.
1	Depression with delirious episode in manic depressive insanity.
2	Depression with catalepsy in manic depressive insanity; both patients had previous attacks, which were formerly diagnosticated as dementia præcox.
1	An hallucinatory depression in a patient of sixty-six years, with evidences of deterioration. This is a peculiar form of dementia which has some resemblance to catatonia, but different from senile psychosis. There are such clinical pictures in the senescence and, anatomically, they show a peculiar fibrillar alteration.
2	Idiocy in young children.
6	Dementia præcox.
3	Mixed forms of manic depressive insanity.
1	Stupor in manic depressive insanity.
1	Cretinism.
1	Mongolian idiot.
1	Dementia præcox; paranoid form in a patient, past forty.
1	Acute hallucinosis.
1	Chronic hallucinosis.
1	Chronic hallucinosis with deterioration, but different from that of dementia præcox.
1	True paranoia.
2	Paranoic states.
2	Cases which showed many features of general paralysis, however, serological and cytological examinations were negative.
1	Cerebral sclerosis with the following symptoms: Gradual development with delusions of persecution; forced laughter; spasm in lower extremities, but without paresis; no ataxia or intention tremor; Wassermann and cytological examinations were negative; no eye symptoms or convulsions.
1	*Dämmerzustand* on traumatic basis.
1	Border line case of dementia præcox.
1	Manic depressive insanity (recurrent excitement) at the age of thirteen.

Pure and experimental psychology was represented by Professor Kraepelin, Dr. Isserlin, and Dr. Weiler. Professor Kraepelin devoted six lectures, with demonstrations, to the important methods of psychological examination, and also fully summed up experimental work, which was carried out in his laboratory on the psychophysical influence of alcohol, tea, and other drugs on fatigue. Various tests for retention, memory, attention, speech, voice, and writing were outlined, and reference was made to association studies. Numerous instruments—chronoscope, chronometre, apparatus for testing writing, voice, and intensity of sleep—were exhibited and described.

Dr. Isserlin gave six lectures on psychodiagnosis and psychotherapy. The history, theory, and practical application of hypnotism were outlined; also Freud's psychology was briefly and critically reviewed. Allusion was made to Dubois's reeducation methods.

Weiler demonstrated apparatus and instruments for testing reflexes, pupils, tremor, muscular power, fatigue, and estimation of blood pressure. It is interesting to note that Dr. Weiler has constructed an ingenious apparatus for measuring and testing the pupils.[1]

Professor Alzheimer, in his twenty lectures, gave an extremely clear and comprehensive review of the entire subject of normal and pathological histology of the cerebral cortex. His lectures and demonstrations dealt with the development of the central nervous system; histology of the important ele-

[1]The description of his apparatus appears in his work on Untersuchung der Pupille und der Erisbewegungen beim Menschen in *Zeitschrift für die gesamte Neurologie und Psychiatrie,* ii, No. 2.

ment making up the central nervous system; the blood and lymph supply of the nervous tissue; a discourse on the neuron theory and Wallerian degeneration; the anatomy and pathology of the glia; pathological alterations of the ganglia cells, nerve fibres, glia cells, etc.; and regeneration process. He also considered the pathological anatomy of various mental diseases; senile dementia, general paralysis and cerebral syphilis. The last he divided into four types: First, inflammatory, including gummatous meningitis, and spirochæta septichæmia; second, noninflammatory endoarteritis (large vessels and small vessels); third, encephalic form (arteriosclerosis plus infiltration); and fourth, mixed forms of these types. Several lectures were given on the functional mental diseases alluding to the infective exhaustive psychosis, dementia præcox, and manic depressive insanity. A few cases of dementia præcox in which the onset was acute and the course rapid, showed some changes in the glia cells, which, although not characteristic, yet were different from findings in other functional psychoses. Other cases of dementia præcox, in which the course was chronic, revealed some alterations in the nerve cells, but again not peculiar to this disease alone. Alcoholic psychosis, epilepsy, and idiocy, also received attention.

Dr. Broadmann had ten hours at his disposal for the presentation of his difficult but interesting subject, the histological topography of the cerebral cortex. Every lecture was accompanied by numerous slides with the projection apparatus. He took up the principles of comparative cytoarchtectonics, comparative morphological, physiological variations of the different regions of the cerebral cortex, and showed how it was possible to establish physiological cortex organology. He reduced the histological topography of the cortex to six layers, and differentiated further the individual layers of the cortical regions. This histological differentiation has a definite relation to various functions of the brain. His material of comparative anatomy was abundant.

Plaut, in his six demonstrations, covered the different methods and results, of the examination of the cerebrospinal fluid, and the application of the Wassermann reaction to psychiatry. He believed that, for careful work, the Fuchs-Rosenthal method for the counting of the lymphocytes in the cerebrospinal fluid is advisable. He recommended the original method for the Wassermann test, and laid great stress on the use of antigen, derived from the extraction of a luetic fœtus liver.

Dr. Rüdin lectured on degeneration and forensic psychiatry. The latter dealt with mental responsibility in medicolegal cases, where sanity was questioned. Some of the subjects had a psychopathic constitution ,and others were afflicted with a definite mental disease. For instance, the misdemeanor in an epileptic state, homosexual act in the aged, lawsuit in a querulous paranoic, murder in a paranoic, larceny in degenerates, and other similar cases. He lectured on degeneration, and considered its theory, causes, types, and prophylaxis. Also Mendel's theory of heredity was explained, and showed how it could be applied to the study of degeneration. Some instructive charts were shown.

Professor Kattwinkel demonstrated neurological cases with numerous illustrations of interesting pathological specimens with the projection apparatus.

In addition to these extremely interesting lectures the members of the class had the opportunity to visit the Munich Psychiatric Clinic and two hospitals for the insane—one, a modern hospital, in Eglfing, and the other, rather an old institution, at Wasserburg. In such a manner one was able to obtain a fairly good knowledge of the management of a hospital and the care for the insane in Bavaria. Professor Kraepelin and his staff took particular pains to call attention to the various interesting features found in those hospitals. The members of the class met the instructors and each other socially on several occasions at the invitation of Professor Kraepelin.

It is not within the scope of this paper to offer a long and detailed description of the Munich Psychiatric Clinic, but suffice to say that it is a type of an ideal hospital for mental diseases. It is situated near the general hospital and consists of a main building and two wings. The whole clinic can accommodate about two hundred patients. All the psychiatric cases of Munich, including acute alcoholics and attempted suicides, are admitted there. The cases are kept in the clinic until the diagnosis is made, and later are either discharged to the care of their relatives, transferred to other institutions, or kept for further study.

The programme for the next course, which has been already published in the *Zeitschrift für die gesamte Neurologie und Psychiatrie,* July 5, 1910, i, 8, is practically the same as last year, with the exception that Professor von Monakov will lecture in place of Professor Liepmann, and a few courses have been added.

For the advanced student of psychiatry and neurology Professor Kraepelin's postgraduate course is of extreme value and aid. It covers practically the entire field of the important problems in psychopathology, neuropathology, and clinical pathology in relation to psychiatry. One is also able to obtain a very good conception of the work which is being done in the Munich clinic and thus receive new ideas and impressions for further research.

STANDARDIZATION OF BLOOD PRESSURE.

By Abdullah K. Sallom, M. D.,
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It is a somewhat remarkable fact in the history of medicine that more than a hundred years elapsed after the discovery of the circulation of the blood by Harvey, before Hale's first demonstration of blood pressure; and it took almost another century before the subject was seriously investigated. The first impetus given to the study of blood pressure was marked by the introduction in 1828 of the mercurial manometer by Poiseulle and the employment of the kymographion by Ludwig. Since then the subject has been carefully studied and much accurate knowledge has been obtained. The method usually employed was to connect a manometer directly with an opened artery and to observe the

height of the column of mercury. Obviously such a method is not applicable to man and another period intervened, terminated by the work of K. Vierordt in 1855 when the indirect methods for the study of blood pressure in man came into use. Since then the subject has been vigorously investigated and the data that have accumulated have become so voluminous as to deter the inquirer and so conflicting as to bewilder him. Thus, Potain considers 140 to 210 mm. Hg. as the normal limits of variation of systolic pressure and places the average for an adult at about 170 mm. Hg. On the other hand numerous observers hold as the upper limit of normal variation 160 mm. Hg. Even to the casual inquirer it would soon be manifested that almost every observer has his own limits of variation. With this and other disadvantages which are too numerous for me to mention here the enthusiasm of the early workers was chilled and the subject lost much of its interest.

I am about to break a time honored precedent and present the result of my work before the facts from which the result has been obtained. After the most careful investigation I have found that normally the blood pressure does not vary more than about 0.3 millimetres of mercury and to be expressed by the following equation:—

$$\text{mm. Hg.} \div (\text{W. C.} \times \text{C.}) = \text{P.};$$

in which mm. Hg. represents the height of the column of mercury; W. C. the width of the cuff employed; C. the circumference of the arm; and P. the pressure.

It is a well known fact that the pressure exerted by any fluid depends entirely upon its height and the size of its base. The size and shape of the vessel plays no part whatever. With this in mind it at once becomes evident that the area upon which the pressure is exerted plays a most important rôle and must be taken into consideration with every observation. Of course this is obtained by multiplying the width of the cuff by the circumference of the arm. Knowing the height of the column of mercury and the area or base upon which the pressure is exerted it at once becomes a simple mathematical problem to compute the actual pressure employed. For example, in the case of M. T., age twenty-two, the circumference of the arm was eight inches, and the width of the cuff three inches therefore: $8 \times 3 = 24$ sq. in. = area over which the pressure is exerted.

The systolic pressure in this case was found to be 125 mm. Hg. If, therefore, 125 millimetres of mercury were sustained over an area of 24 square inches, 1 square inch will support a column of mercury 1/24 of 125 mm. Hg. or 5.21 mm. Hg. By computing in this manner the actual pressure employed the results have been startling and of great importance.

Age has been found to have no influence on blood pressure it being the same in the child and the adult. In making this statement I am aware of the great importance laid by all observers upon age. The error is due to the fact that the circumference of the arm was not taken into consideration. It being smaller in the young the blood pressure readings were necessarily lower than in the adult, which, however, when standardized gave the same ratio for each square inch. The same is true in regard to sex. A few cases chosen at random serve to illustrate these facts.

Name.	Diagnosis.	Age.	Circumference of arm in inches.	Systolic pressure, mm. Hg.	Pressure per square inch, mm. Hg.	Units of pressure.
K. T.	Bronchitis.	4	5⅞	85	4.82	48
M. B.	Rheumatism.	53	9½	120	4.21	42
G. C.	Feels perfectly well but for little pain in ear.	38	11¾	150	4.25	42½
E. M.	Epilepsy.	26	8	150	6.25	62½
M. T.	Pleurisy.	22	8	125	5.21	52
M. J.	Practically normal, is rather a nervous girl. Had St. Vitus's dance.	10	7	100	4.76	47½
G. R.	Bronchitis. Has been constipated for three days.	16	7	125	5.95	59½
K. F.	Normal.	14	7¾	100	4.30	43
M. F.	An anæmic and rather delicate girl.	16	8¼	120	4.84	48½

Were we to accept 100 to 150 millimetres mercury as the normal limits of variation of the systolic pressure we could not in a single case be justified in stating that there existed an overtension and yet the reverse condition is true. In the cases of G. C. and E. M. both recorded a systolic pressure of 150 mm. Hg. By computing the actual pressure employed, however, it was found that in the former it was practically normal while in the latter it was the highest in the series of cases given.[1] It will also be noted that in the cases of K. F., age fourteen; G. C., age thirty-eight; and M. B., age fifty-three, although showing quite a difference in the systolic pressure as denoted by the height of the column of mercury nevertheless when standardized gave practically the same ratio for the square inch. In the case of K. T., age four, it was a little higher—4.82 mm. Hg. to the square inch—this slight rise being undoubtedly due to a mild bronchitis.

The Unit System. It is somewhat inconvenient to speak of pressure in terms of 4.82 mm. Hg. per sq. in.; 6.25 mm. Hg. per sq. in., etc. On this account and in order to place the blood pressure readings upon a definite standard it has been found convenient to express them in terms of units. Such a method is simple and practical. It is obtained by taking the figure or figures before and the first figure after the decimal to represent the number of units. For example:—4.82 mm. Hg. per sq. inch would be spoken of as 48 units; 6.25 mm. Hg. per sq. inch as 62½ units, etc. By such a system our readings are simplified and we become better able to appreciate slight differences. Thus, we note in the case of K. F. a pressure of 43 units while E. M. records the high pressure of 62 units.

With the study of blood pressure in man on the unit system, I rest assured that we will attain results undreamed of, and the subject will assume an importance equal even to the study of temperature. A word of caution, however, must, at the present time, be added. For the same instrument the normal blood pressure expressed in terms of units will remain unchangeable. It must be borne in mind that each instrument will in terms of another reg-

[1] It is of particular interest to note that before being able to standardize the blood pressure readings I was unable to realize that in this case a marked excessive tension existed. The patient was given the regular treatment without much success. After having discovered that the patient had the high pressure of 62 units, I directed my efforts toward its reduction. Since then the patient has not had a single attack, and as she stated "feels fine." Of this case I shall write more in detail in another report.

ister a different reading, although the same pressure is employed. This defect has not hitherto been corrected, inasmuch as the different instruments have not been made to conform to a definite standard. I hope to submit at a very early date (Report No. IV) a method whereby the actual pressure which an instrument exerts is gauged in terms of another, so that the readings for the different instruments will correspond. Until then each observer must determine what number of units his instrument expresses the normal to be. He can then with extreme delicacy note any pathological variation in blood pressure.

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DR. POHLY'S CASES OF "ANÆMIC ULCER" OF THE THROAT.

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Chicago.

In the *New York Medical Journal* for August 27, 1910, appears an article by Dr. A. G. Pohly on Anæmic Ulcer of the Throat. As I can see no foundation for his diagnosis, I take the liberty of asking Dr. Pohly a few questions.

His cases were as follows:

Case I. Miss D. C., twenty-two years of age, came to me June 30, 1903, complaining of pain in the throat which had lasted about five days. Upon examination I found a small, round ulcer on the left tonsil. The patient was very anæmic, but there was no history of either tuberculosis or syphilis, and the ulcer healed within a week under local applications of silver nitrate. I am sorry to state that the patient disappeared, and I have not seen her since.

Case II. Miss N. J., twenty-three years of age, nurse, came to my office in July, 1904, complaining of pain in the throat which had lasted for ten days. She had been in attendance on a severe case of typhoid fever for the last six weeks, where she had been on night duty, the patient having been delirious for the last three weeks, and had finally died. She was in a very nervous and debilitated condition. On examination I found a small round ulcer on the right tonsil. Naturally my first thought was syphilis, and I questioned her accordingly, but although she was perfectly willing to give me all information, and knowing the consequences of the disease she absolutely assured me that she had never had any previous trouble, nor could she account for her present illness. The ulcer disappeared after about a week or ten days under treatment with silver nitrate, and she has not had any trouble up to the present time, this being about six years ago.

Case III. Mrs. G. K., twenty-seven years of age, consulted me in July, 1905, complaining of pain in the throat for the last three weeks. On examination I found a small, round ulcer on the uvula. She was treated the same as the previous cases, but as this ulcer healed, other small ulcers appeared on the soft palate which disappeared entirely within about four weeks, and she had had no trouble up to 1908, about two and one half years later, and I have not seen her since. At the time these ulcers appeared she was in an anæmic and nervous condition.

1. Were any examinations made for the *Spirochæta pallida* in any of the cases?

2. Was the Wassermann test employed?

3. Is it not true that syphilitic ulcers frequently yield promptly to topical applications of silver nitrate?

4. Is the absence of a syphilitic history, especially in women of repute, a strong argument against syphilis in the presence of doubtful lesions?

5. Is not syphilis often characterized by the non-recurrence of lesions for some years?

6. What was the rationale of the causation of the throat ulcers by anæmia?

7. Granting that anæmia was the underlying ætiological factor in the reported cases, was not some infection or other necessary as a determining cause, and if so, what was probably the infection, and should the diagnosis have been "anæmic ulcer"?

As to Case I in particular, the diagnosis of anæmic ulcer would appear to be a diagnostic "stab in the dark."

815 Reliance Building.

ACONITE.

"Queen Mother of Poisons" ("Wolf's bane"; "Leopard's bane"; "Women's bane"; "Venus's Chariot"; "Scorpion"; "Monkshood"; "Blue Rocket"): Its Place in History, in Mythology, in Criminology, in Botany, in Therapeutics, and in Toxicology.

By John Knott, A. M., M. D., Ch. B., and D. P. H. (Univ. Dub.); M. R. C. P. I.; M. R. I. A., etc., etc.
Dublin, Ireland.

(*Continued from page 580.*)

With regard to linguistic variations of appellation, we are told by the same encyclopædic (and conscientious) John Parkinson that in addition to the application of the "Latine *Aconitum & luparia*," "It is called of the *Arabians Chanach adip* or *adib, id est, strangulatorem lupi,* of the *Italians Aconito & Luparia,* of the *Spaniards Yerua matta louo,* of the French *Tue loup,* of the *Germans Wolffswurtz,* of the Dutch *Woolfwurtel.*"

Under the heading of *The Vertues* we are told by the same unimpeachable authority that:

"All these plants are poisonous and deadly to mankinde, to be taken inwardly any manner of way, as that feast at Antwerpe sheweth, where by ignorance the leaves of *luparia* or *Napellus* being put as a sallet herbe with others, many that did eat thereof died, after the violent passions they endured for the time: it is also as deadly to Dogs, Wolves, and other creatures, who shall take thereof, either the juyce of the herbe or roote, or the herbe or roote it selfe, put into flesh, and given them to eate: in the juyce of the rootes especially, the hunters of wilde beastes, doe use to dippe the heads of their arrowes they shoote, or darts they throw at the wilde beasts, which killeth them that are wounded therewith speedily; yet it is said that the flesh of the beasts so killed is no whit poysonous but safe, and eateth more tender than of others of the same kinde, not killed in the same manner, so as it abide undressed for a day and a night. The ordinary physicall remedies that is to be used for any that have taken of these herbes, is first to procure vomiting, with all the speede possible, to avoid as much of the evill substance that remaineth in the stomacke as may be; and secondly glisters, both to clense the bowells and to draw the evill quality downewards that way; and thirdly, preservatives to defend the heart and vitall spirits from suffocation, or the bloud from putrefaction or congelation; which are effected by taking Mithridate, or rather *Venice* Treakle, which is more appropriate for poysons; as also to drinke the decoction of *Origanum*, Rew, Horehound, Wormewood or Wormewood wine; as

also Southernwood, *Chamæpitys,* or ground Pine, and *Gentiana:* a dramme of the true *Opobalsamum* taken with hony is much commended, and so is Castor, Pepper and Rue, of each a little quantitie taken in wine. Some commend also to drinke that wine, wherein iron, or gold, or silver, made red hot hath beene quenched. *Petrus Aponensis* in his Booke of poisons, commendeth the use of *Terra lemnia,* a dramme or two, thereof to be taken in warme drinke; but above all hee saith that *Aristolochia longa,* or the long rooted Birthwort, is the most speciall antidote or remedy against all Aconites: But behold the wonderfull goodnesse of God; who although he hath given to these plants so deadly faculties, yet hath he endued them also with other properties, very beneficiall to mans health: as that the juice or distilled water of *Aconitum Ponticum* of both sorts, dropped into the eyes, taketh away the inflammation or rednesse in them, as also cleareth them from any haw, or pinne or webbe, growing in or upon them. . . . . Certainely if either the rootes or seedes of these Aconites, or of the other Helmet flowers be beaten into pouder, or the juyce of them boyled with oyle, or Hogges fat, and the head and body anointed therewith, it will kill lice and vermine breeding therein; the lye also wherein the leaves, rootes, or seede, hath beene boyled, doth the same, and clenseth the head also from scurfe and dandraffe. *Galen* saith that they are used in foule ulcers and sores, to consume the dead flesh, so as the sores be not in the mouth or privities, which by reason of their vicinitie, to the spirits and life are not to be dealt with in such sort. . . . . ." And of Anthora we learn that: "The roote is said by *Hugo Solerius* to purge the body very strongly, of waterish and vicious humors, both by vomit and by the stoole, if the quantitie of a beane, be taken in broth or in wine; by reason of the exceeding bitternesse of the roots, it killeth all sorts of wormes in the body: it is also saith *Guainerius,* by mine owne experience and sight, as effectuall as *Dictamnus* unto all the purposes whereunto it serveth; the powder of the rootes taken in wine is a most speedie and speciall remedie, against the winde collicke, which the *Savoyards* about *Diam,* where it groweth abundantly, know very familiarly, and call it *L'herbe du machon,* that is, the winde collicke herbe, and suppose that it having two round rootes, the one will be full and solide one yeare (as it is in the *Orchides* or *Satyrions*) and the other lanke, which changeth to be solide the next yeare, when the other that was firme in the former yeare, will then become lanke; that the sound roote will ease the winde chollicke, and the lanke procure it; the same rootes also used inwardly, is not onely the chiefe and principall Antidote or remedie, against the poyson of these Wolfes banes, and Helmet flowers, but of the Leopards bane, and all other poysonous herbes whatsoever: and against the venome of all serpents and other venemous beasts or creatures, and is also a most soveraigne remedy against the plague or pestilence, and all other infections, or contagious diseases, which raise spots, pockes, or markes in the outwarde skinne; by expelling the poyson from within, and defending the heart, as a most soveraigne Cordiall."

As will readily be anticipated, the appallingly destructive properties of the aconite plant furnished the riotously productive imaginations of the ancient botanists and pharmacists with material specially suitable to the creation of still more weird capabilities than those with which it has been so very liberally endowed by (step-) mother Nature—in the direction of subversion of the laws and phenomena of vital force, and successful antagonism to the distinctive functions of animal existence. Accordingly, the reader whose mental prominences have been rendered callous by too varied experience in the bypaths of scientific—and prescientific—lore, will feel no surprise on being confronted with the plain question: "Who knoweth not, that scorpions if they be but touched with Aconite, presently become pale, benummed, astonied and bound, confessing (as it were) themselues to be vanquished and prisoners; contrariwise, let them but touch the white Ellebore, they are unbound and at liberty againe; they recouer (I say) their former vigor and vertue, whereby we may see that the Aconite, also giveth the bucklers to enemies twaine, pernicious poisons both, the one to it selfe, and the other to all the world." (Pliny's *Natural History,* Holland's version.)

There can, I venture to suggest, be little doubt that the origin of the idea of the antipathy between the scorpion and the aconite was germanic to that which developed and bore considerable fruit in the more recent centuries: the *"signature,"* which may, perhaps, be most instructively labeled *similia similibus*—the antipathetic similarity of conformation having led in this instance to the revelation of the fancied resemblance of the curve of the tail of the proverbially venemous denizen of the animal kingdom to that which characterized the roots of the most deadly of vegetables. Such beliefs collectively formed a conspicuous item of the vegetable lore of classic antiquity, and one which steadily waxed in stature and in strength—if not so precisely in wisdom—during the interesting centuries of the growth of the mystical faith of the Middle Ages; till it came to reach the all-embracing dimensions of the doctrine of "signatures," according to the teaching of which the properties allotted by creative Providence to every individual plant were *superficially* indicated for the recognition of the observant eye by the features of its external physiognomy. Hence, pretty surely, was derived the original germ of Pliny's information that: "being given in hot wine it is a counterpoison against the sting of scorpions, for of this nature it is, that if it meet not with some poison or other in men's bodies for to kill, it presently sits upon them and soon brings them to their end; but if it encounter any such, it wrestleth with it alone, as having found within a fit match to deale with, neither entreth it into this fight unlesse it find this enemy possessed already of some noble and principall part of the body, and then beginneth the combat; a wonderful thing to observe, that two poisons, both of them deadly of themselves and their own nature, should die one upon another within the body, and the man by that mean only, escape with life." (Those readers who, in their pursuit of knowledge, alternate the frivolities of fable with the ponderosities of science, will here be reminded of the unprecedented and unhoped for doorway of deliverance which the dexterous strategy

of an anxious Providence provided for the escape of the late Baron Munchausen in that desperate moment of the latter's adventurous existence when he had lain down—without prospective shadow of hope—on his face, between an open-mouthed crocodile on the one hand and a crouching lion on the other.)

Still another item of ambidexterous antipathy is furnished by our mysterious monkshood, according to the same inexhaustible oracle of antique scientific faith: "The people about Heraclea to kil the panthers which breed in those parts, use to rub with Aconite certain gobbets of flesh, which they doe lay about the mountains as a bait and bane for them; and unlesse by this means they did destroy them, no doubt they would fill the whole countrie, wh'ch is the cause that some call it Pardialanches *i.* libard-bane; but they again on the other side, presently have recourse to the excrements of a man, as I have before declared, the only counterpoison whereby they save themselves."

The transition of such mingled items of animal and vegetable lore, through mediæval, down to modern literature is well exemplified in Sylvester's version of *Du Bartas:*

> Onely the touch of choak-pard Aconite
> Bereaves the Scorpion both of sense and might.
> —*Weekes,* III, xxvii, 1.

—and in Shakespeare's well known lines:

> Though it doe work as strong
> As Aconitum, or rash Gun-powder.
> *Henry IV.,* Act IV, Sc. 4.

—a curiously interesting specimen contact of the old with the new knowledge; of mental association of the idea of the silent and subtle life destroying agent, which represented the most darkly murderous skill of the classical and mediæval ages, with that of the fulgurating exterminator which became popularized with the illuminating Science and Art of the Renaissance!

The domain of *Animal Therapeutics* was, as all well informed readers know, cultivated by the ancients with a most assiduous (and imaginative) industrial display. During a long series of centuries, indeed, it represented one of the most prominent of the accepted articles of the healer's faith—one of which recent "scientific *discovery*" has presented the world with a somewhat ghostly resuscitation. And, in this department, we find that so familiar and grateful a remedy as *cow's milk* was highly recommended as an antidote to aconite. So was the *broth made of tripes.* We are confidently informed, too, that the "*broth of an old Cocke* . . . is most effectuall against the poison of the herbe Aconitum, but then it must be given with a little salt among." The *Castoreum,* of the origin of which tales so curious were told by the ancient pharmacists and natural historians, was also included in the same rank; for we are assured that: "soveraigne it is for the poison of the herb Aconitum or Libard bane, in milk or faire water."

Supplementary catalogues of "antipathies" were, as might well be expected, prominently placed in the records of mediæval scientific lore; and were, as a natural consequence, highly recommended as antidotal reagents. That foremost mediæval luminary of the healing art, the Arabian Avicenna, whose *Canon* functioned for five centuries as a sort of medical Bible in orthodox professional practice, informs his readers that there is a mouse which feeds upon the root of aconite, and that "that mouse is the Treakle thereof, and being taken in the whole substance, resisteth the venome of the *Napellus,* and freeth them from all danger." These statements were corroborated by Matthiolus, the famous commentator of Dioscorides and "Father of Modern Therapeutics," who assures his readers that he had often found that mouse! The redoubtable Petrus Aponensis also contributes supporting testimony on this head; and confidently informs the inquiring reader that "this Mouse which feedeth upon the roots of *Napellus* is the *Bezoar* against *Napellus,* if it be dryed and two drams of the pouder given in drinke." But, unfortunately—as ever—for the harmony of "expert" medical testimony, we have yet other three names of authoritative respectability ranged on the opposite side! Antonius Guaianerius, Petrus Pena, and Matthiolus de Lobel were, each and all three, of the opinion that it was really *not a mouse* at all, but a *midge,* that was meant by the great Arab physician; that it was either by a scribe's slip, or a reader's blunder, that the subsequent Greek *textus receptus* presented a μῦς instead of the original μύια; that the root in question was really as deadly to mice as to men and to wolves; while, on the other hand, they quote the ocular evidence of "the Shepheards, and others living in those mountains of Switzerland, where the Napellus groweth in abundance," to the fact of "great store of certaine great Flies, with blewish greene heads and wings, like unto *Cantharides* feeding upon the flowers, when as they could not finde any other creature to touch or eate it; . . . of which Flies as they say, and not of any Mouse, is made an antidote most prevalent against the poison of the most venomous Spider called *Tarantula,* as also against all other Epidemicall, generally contagious diseases, and is made after this manner: Take twentie of the flies that have fed upon *Napellus,* of *Aristolochia* and *Bolcarmonicke,* of each a dramme, whereof a dramme is to be taken at a time." And we further learn that the antidote of Guianerius against aconite "is to be made with *Terra lemnia,* Bayberries, and Mithridate of each two ounces: xxiiii of the Flies that have fed upon *Napellus,* of hony and oyle a sufficient quantitie to make it up into an Electuary." And, in this connection, our famous herbalist, John Parkinson, remarks, in summarizing his data: "that *Dioscorides* and others doe write, that the *Aconitum Lycoctonum* (whereof *Napellus* is a kind and as strong) is also called *Myoctonon* or *Myophonon,* that is *Muricida,* because it killeth Mice, as well as Wolves, and therefore they could not live upon it if it would kill them." (The diction and logic of this last clause can hardly fail to strike the observant reader as being somewhat suggestive of so called "Hibernian" inspiration.) The statement of Pliny regarding its telepathic influence on mice has been already quoted, and presents a curious contrast to the opinion attributed to Avicenna.

But this weirdly unique herb of the "helmet flowers" was even noticed to display a bilateral antipathetic symmetry towards certain members of its vegetable, as well as of its animal, living con-

temporaries. The *Anthora* possessed an established reputation as the "Counterpoison of Monkes Hood"; and of it we are told by one of the grand old herbal authorities that it "groweth with or hard by the *Napellus* or *Thora;* although *Gerard* saith the contrary, and adviseth that it be not planted neare the *Napellus* or Helmet flower, for feare of drawing the venemos qualitie thereof with it." Among the very many antidotes which the fertile imagination of classic antiquity provided against the life destroying powers of aconite, we find that *Garlic* occupied an honored place. And when we find the authority of the elder Pliny pledged to the statement that, not only "it is of power to dull and kill the force of the venomous herb Aconitum," but that "also it conquereth the soporiferous and deadly quality of Henbane: the bitings also of a mad dog it healeth, if it be applied upon the hurt. . . . As for the sting of serpents verily, garlick is exceedingly effectual if it be taken in drink; but withal you must not forget to make a liniment of it," and even that "the very sent thereof chaseth Serpents and Scorpions away"; we find that there is no special scope for the development of further surprise on learning the fact that the Roman (and Italian) peasantry were so devoted "garlick eaters" as they proved to be in the days of (Shakespeare's) *Coriolanus.* Another of these antidotes was the *Eryngion* ("sea holly") which shared even with garlic a very creditable proportion of the power against snake poison. Indeed, "Heraclides the Physitian" was of opinion that its root, "boiled in the broth of a goose is of more efficacie than all other" remedies against aconite—and also sundry other potent vegetable poisons. Curiously enough, Apollodorus recommended its preparation for the same purpose by having "a frog sodden withal." This mode of administration savors distinctly of the methods of the exploring vivisectionist of our own generation; while the statement of Pliny, that "Mere wine [*merum*] not delaied is a remedy against" this and many other poisons, both of animal and vegetable origin, goes to show that the ancients displayed a distinct appreciation of the use of alcoholic stimulants in the extreme cardiac depression produced by certain toxic agents. Of another celebrated remedy we are told by the same Pliny that: "The Balsame oil, called *Balm,* is of all others most pretious. . . . It danteth and mortifieth the poison of Aconitum, if it be taken with milk."

The fact of the universal prevalence of a hankering after a panacea, a universal antidote, a single reliable remedy for each and all of the innumerable diseases and derangements of the human economy, becomes—as might naturally be expected—specially prominent in an investigation of the history of a natural product possessed of powers so malignantly and weirdly mischievous as those of aconite were so well known to be. The people of ages less scientific (in most experimental departments, at least) than the twentieth century, and more homicidal (physically, if not morally) clung instinctively to every prospective hope of the attainment of a protective agent which was so often in requisition, and which could not be furnished by any of the procedures known to the special skill and attainments conferred by the usual courses of professional training. Accordingly, a certain select few of the universal remedies proposed by those of olden time, and, as might also have been anticipated, every one of the more prominent members of the "all heal" group, actually figure conspicuously in the fairly comprehensive series of antidotes to the deadly aconite which are included in the quotations already given. The last mentioned is *Balsam* ("Balsame oil," or more modernly popular *balm*—in the curtailed form of its spelling). Of this remedy the learned Dr. James—the friend of Dr. Samuel Johnson and inventor of the famous antimonial "fever powder" which has been credited with closing the career of our own beloved Dr. Oliver Goldsmith—gives the following eighteenth century retrospective view:

"The very word *Balsam* seems, in all Ages, to have had an Idea of Excellence and Efficacy attached to it, above any other Branch of the *Materia Medica*; for the ancient Physicians, by this Word, meant any Species of Medicine, which powerfully recommended itself by a grateful and delicious Fragrance, and whose Use, both internal and external, was of singular Efficacy in preventing Putrefaction, and resisting Corruption. *Balsams,* 'tis true, were originally used for embalming and preserving the dead Bodies of those who, during their Lives, had signalized themselves by great and heroic Deeds, or endeared themselves to Mankind by the Practice of the several Virtues. And when the thinking and sagacious Part of Mankind observ'd, that the Bodies of the Dead were, by means of *Balsams,* enabled to defy the attacks of Corruption, for an immense Series of Years, they began to imagine, that their Virtues might extend to the Living, protract Life, and corroborate what they called the *Calidum Innatum* fluctuating in the Blood. But however unintelligently they may have talked on this Point, yet 'tis certain, the Notion itself was just and well founded, since we are taught by Experience, that amongst the vast Variety and infinite Store of Medicines, with which the Mineral, Animal, and Vegetable Kingdoms supply Mankind, none are more powerful, none more efficacious, than those which come under the Denomination of *Balsams* and *Balsamics.*"

And of this supreme series of unrivalled remedies, the same reliable authority informs us that "the most antient, and that which first bore the Name of *Balsam,* is the *Opobalsam,* both *Arabic* and *Egyptian.* This was produced by a small Tree growing in *Judæa, Egypt,* and *Arabia,* the whole of which was of a fragrant Smell; and when an Incision was made into its Bark, it yielded a resinous Juice of a most grateful Odour, and of uncommon Virtues. The Antients called the Wood of this Tree *Xylobalsamum,* and its Fruit *Carpobalsamum;* but the Name *Opobalsamum* was appropriated to its Juice or Tears."

He also quotes the account of the tree which is given by "*Strabo* the prince of antient geographers:"

"There is a Field near *Jericho* in *Palestine,* in which there is a Nursery of *Balsam-trees.* This Tree is a certain, small, odorous, aromatic, and ruticose Tree, not unlike the Cytisus or Turpentine-tree. When an Incision is made into its Bark it yields a

Juice resembling viscid and tenacious Milk, which, when received in shells, coagulates. It wonderfully cures Headacs, recent Inflammations of the Eyes, and Heavinesses, and what contributes much to the Value of this Medicine is, that it is found nowhere else but here."——and subjoins that of *"Prosper Alpinus,* the most accurate Describer of the Egyptian Plants:" "The *Xylobalsamum* is a small Tree, which grows to the height of the Cytisus, bearing few leaves, which resemble those of Rue, or those of the Mastich-tree, but which are always green. Its Branches are odorous, and so gummy, as to stick to the Fingers when handled. It bears small white Flowers resembling those of the *Egyptian* Thorn, but very fragrant, from which arise yellow seeds, contained in Husks of a blackish red Colour, very fragrant, and containing within them a yellow Juice which bears a near resemblance to Honey; and which affects the Tongue with a bitter and somewhat acrid Taste, and smells like *Opobalsamum.* Its Fruit, in Figure and Bulk, resembles that of the Turpentine-tree."

The etymology of the word *balsam* tells, by itself, an interesting item in the history of the reputation of the vegetable product connoted by the term—as specially imported items of foreign nomenclature are frequently found to do. The first syllable represents a curtailed spelling of *Baal* (= *Lord*), while the second signifies [of]*oils,* so that the name balsam indicates the right of the item to which it refers to the position of majestic predominance among those vegetable products to which so much importance was attributed in the Biblical lands and ages. Indeed, the special locus of the production of the best specimen has been revealed to us by the inspired Jeremiah himself, the most typically Jewish of all the prophets: "Is there no balm in Gilead?"—a query which was rendered in the original issue of the Doway version: "Is there no rosin in Galaad?" —thus presenting a distinctive feature which has made the original orthodox English version of the Old Testament known to bibliomaniacs as the "Rosin Bible."

Another antidote of high reputation in those classical ages of prescientific faith was *mulberry-juice,* of which we are told that "it is a singular counterpoison for them who have drunke either the juice of Aconite [*i. e., Libard-bane*] or swallowed a venomous spider." The *house leek* also possessed "this peculiar virtue, to resist the deadly poison of the herb Aconitum."

It is also worth noting that Pomet, the great French authority of the seventeenth century on the history and properties of "drugs," gives his readers the following information regarding the powers of the Anthora: "The Peasants who gather this on the Alps and Pyrenees use it with Success against the Biting of mad Dogs, and to cure the Colic; they take it for a sovereign Remedy for those who have eat the *Thora* or deadly *Aconite.*" We are also assured by Pliny that "the greater *Sengreene* hath this peculiar vertue to resist the deadly poison of the herb Aconitum. Furthermore it is said, that whosoeuer carry it about them shall not be stung by scorpions."

(*To be continued.*)

Our Readers' Discussions.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

CII.—How do you treat other electric shocks than that of lightning? (Closed September 15, 1910.)

CIII.—When can a pulmonary tuberculosis patient be discharged as cured? (Answers due not later than October 15, 1910.)

CIV.—How do you perform vaccination? (Answers due not later than November 15, 1910.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED*) that the answers be short; if practicable no one answer to contain more than six hundred words.*

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The prize of $25 for the best essay submitted in answer to question CI has been awarded to Dr. William Brady, of Elmira, N. Y., whose article appears below.

PRIZE QUESTION CI.

THE TREATMENT OF CHRONIC NASAL CATARRH.

By William Brady, M. D.,
Elmira, N. Y.

In the mind of the laity "chronic catarrh" and consumption are two diseases that are generally considered incurable. A very large percentage of the population of this climate suffers some form of catarrh, and, in view of the diminished field of medical work brought about through keener competition within the ranks and all sorts of cults and fads without, the treatment and relief by means of patient attention to these numerous sufferers would seem to offer the general practitioner an opportunity to fill in the vacancy left by those of his clientèle who may have departed to try the "new kind of doctor." Only the minority of these patients consult the physician for "catarrh"; as a rule they complain rather of some secondary effect such as deafness, throat symptoms, annoying cough, headaches, obstruction of breathing, etc.—symptoms which demand an inspection of nose and throat with headlight, spectrum, and mirrors as a part of the general physical examination. The possibility of chronic cardiac or nephritic disease and of tuberculosis pulmonalis must always be eliminated before attempting treatment.

The patient is quite certain to believe that his "blood is bad," that the trouble is constitutional in origin—a view that is usually correct in that dietetic excesses, improper underclothing, poor ventilation, and overheated dwelling are responsible for a physical state predisposing to catarrh. His blood is indeed bad, but his habits are worse.

General management: With minor deviations to meet individual circumstances my instructions to the patient are as follows:

1. Fletcherize. Do not wash down food with liquids—drink your water, tea, coffee, or beer at the end of the meal. Meat once a day or less often. Fruit at breakfast, or at least fruit to start breakfast. No alcoholics, or at most only after dinner. No smoking, or at most once after each meal; cigarettes prohibited.

2. You must wear woolen or wool and silk knitted light weight underwear at least eight months in the year, with woolen stockings, of course. You cannot hope for a permanent cure if you "stick to your cotton." Underwear protects you against sudden changes of temperature from your shop or office to the street; outer clothing, coats or wraps, may be worn as comfort dictates to keep you warm; but that is *not* the purpose of underwear. No coddling with throat mufflers or chest protectors; if your throat or chest are "weak" strengthen them with dashes of cold water or cold baths each morning.

3. Keep your bedroom window open all the year round.

4. Keep your living rooms at a temperature not above 65° F.; properly dressed this temperature will be found comfortable.

Having completed the general examination general remedies indicated may be prescribed. If the tongue is coated a valuable help is

℞ Effervescent sodium phosphate, ...ʒviii.
Sign. Heaping tablespoonful taken while foaming in a small glass of water early each alternate morning.

This relieves hepatic engorgement and, through the œsophageal plexuses, improves the venous stasis in the nares indirectly. In a patient of spare build, if an increase of weight would not be undesirable, small doses of arsenic, once daily, are very useful. Sometimes codliver oil is indicated, given in a single dose, at bedtime, each night, of half to one ounce of pure oil. In the stout, plethoric, lazily inclined cases thyreoid extract does great good, while the anæmic individual requires iron given in freshly made Blaud pills, not more than ten days old.

The patient should be instructed how to use the atomizer at home; a straight tip is best; the solution must always be warm, and the bottle about half full; the spray should be directed straight back along the horizontal floor of the nostril, not against the roof; the solution should be freshly used, and if practicable drawn back and ejected from the mouth to thoroughly cleanse the posterior nares. Ordinarily a thorough spraying at the patient's home before retiring each night is sufficient; it is unwise to wash away the bactericidal nasal secretion just before going on the street, since infection may be encouraged.

Local treatment: The simple chronic rhinitis, the hyperæsthetic rhinitis, and the hypertrophic forms may be practically considered together. (The atrophic or dry form requires different treatment, to be mentioned later.)

First, adenoids, polypi, or greatly enlarged tonsils must be extirpated if present. The mucosa is excessively sensitive at the beginning, and therefore we should commence each treatment by a momentary spray of:

℞ Cocaine hydrochloride, ...gr. iv;
Adrenalin hydrochloride, ...gr. 1/20;
Hammamelis water (without alcohol), ...ʒi.
M.

While awaiting the contraction and anæsthetic effect of this half a dozen applicators are tipped with cotton; and the posterior nares may be inspected by aid of the rhinoscopic mirror and head light to locate any crusts or strings of dried secretion that are so troublesome to the patient. The nasal cavities should now be freely and repeatedly sprayed with a half strength Dobell's solution (made properly, not from so called Dobell's tablets) and the patient urged to expel it through the mouth. The excess is drained and wiped out, and the lower turbinates are then brushed gently over with a cotton tipped applicator dipped in

℞ Camphor,
Ethylglycolic acid ester of menthol, ...āā gr. x;
Liquid petrolatum, ...ʒi;
M.

and this followed by the vaporizer carrying,

℞ Eucalyptol, ...gr. v;
Oil of cubeb, ...♏x;
Liquid petrolatum, ...ʒi;
Oil of rose, ...♏ii.
M.

This is about all the stimulation it would be wise to attempt at the first sitting. The patient is ordered to report two days later, and he departs with a grateful sense of relief at hand.

The second treatment is a repetition of the first, with the following addition of

℞ Iodine, ...gr. x;
Liquid saponated petrolatum (N. F.), ...ʒi.
S. "Iodine sol. No. I."

This is brushed over the inferior turbinate body well back to the posterior nares, and the patient warned that the reaction ensuing within an hour after this and subsequent treatments is a "good sign," not a "fresh cold." The treatment, like all the rest, is concluded by the oil spray.

The patient returns every alternate day for some two to four weeks, depending on the progress made; after two or three applications of "iodine solution No. 1" a stronger solution is necessary, but now, before applying it, a two per cent. cocaine solution should be mopped over the surface to be treated less the patient be frightened away.

The stronger solutions are:

℞ Iodine, ...gr. xvi;
Potassium iodide, ...gr. xlviii;
Oil of gaultheria, ...♏iv;
Glycerin, ...ʒi;
S. "Iodine Sol, No. ii."

℞ Iodine, ...gr. xxiv;
Potassium iodide, ...ʒi gr. xii;
Oil of gaultheria, ...♏v;
Glycerin, ...ʒi.
S. "Iodine Sol. No. iii."

Solution No. ii is used from three to ten times and then No. iii is commenced. Improvement becomes apparent to the patient in the relief of symptoms and to the physician in the steady shrinkage of the hyperplasia of turbinates and mucous membrane after the first three or four treatments. Sittings need not be held oftener than every third or fourth day when progressing favorably. By the time two or three applications of solution No. iii have been made the average case will be in a nearly normal condition; if obstinate, more rapid reduction of hyperplasia can be obtained through the use of chromic acid, either as a stimulant or as a cauterant, as seems preferable.

Preceding chromic acid a four per cent. solution of cocaine must be brushed over the surface to be treated two or three times. An applicator is heated in an alcohol flame and a crystal of chromic acid picked up on its tip; the acid is then fused to a round bead by heating the applicator about an inch back of the acid. The thoroughly cleansed nostril and turbinate are wiped quite dry with cotton carriers, and the acid carefully carried back to the farthest point of overgrowth; either several points may be touched for the strong stimulant effect or a white band may be cauterized the full length of the hypertrophy. Immediately thereafter the Dobell's solution should be freely sprayed over the treated surface to neutralize any excess of acid, then a brushing with camphor and an insufflation with thymol iodide completes the treatment. Nothing further should be attempted for about ten days, when the eschar will have come away. The patient must not blow his nose very forcefully meanwhile; by the way, his strenuosity quite always requires tempering in this habit, one nostril at a time, and that done not too well, is a necessary injunction to enforce.

The cauterizing may occasionally be repeated two or three times to good advantage.

The atrophic form: For the atrophic rhinitis the greatest relief obtained in the comparatively few cases I have observed was from a spray of a two per cent. silver nitrate solution, after a thorough cleansing of the entire cavity by persistent mopping with cotton applicators. The cleansing taxes one's ingenuity, but no treatment would give any relief unless the surfaces were first rendered perfectly clear of all crusts and secretion. These patients get comfort out of the home use of a stimulating oil, such as that before formulated, as a supplement to their cleansing sprays.

I have never seen very marked improvement, other than the increased comfort, from any treatment of atrophic catarrh. Fortunately they are very few compared to the ordinary forms, and in these latter one can hold out very positive prognoses if the patient attends faithfully, interruptions in treatment bring disappointment to the patient, and therefore the irregular caller might better be turned away.

On discharging the patient, it is well to remind him of the value of living up to his original programme and to suggest that he return after a couple of months for an inspection.

The turbinate bodies are very important physiological structures and a little patience and perseverance on our part would prevent their sacrifice to the excessive degree now practised by the specialists. Many rhinologists bite off a turbinate with as little compunction as the patient himself feels in getting rid of a "growth" in his nose!

Dr. Beverley Robinson, of Westport, N. Y., writes:

The causes of chronic nasal catarrh are mainly impaired general nutrition, bad hygienic surroundings, obstructed nasal passages, and follicular disease of the nasopharyngeal space. Dust, winds, exposure, draughts, too much or too little covering (clothes), excessive eating, drinking, smoking are all efficient causes at times, but those first mentioned are primary and as a rule more essential.

Impaired general nutrition if present should be combated by appropriate tonics, food, air, and exercise. Bad hygienic surroundings if present and remediable, must be gotten rid of; if not, the chronic nasal catarrh will, if it exists, remain incurable.

What I mean especially are insufficient air and light, bad plumbing causing sewer gas to enter rooms, little or no sunlight.

Obstructed nasal passages are usually due to hypertrophy of turbinated bodies combined, or not, with deviation of the nasal septum. In a small proportion of cases straightening, or resection of a portion of the septum is essential to cure. In a very large number of instances, the thickened mucous membrane covering the turbinated bodies, must be reduced. As a rule, one, or repeated cauterizations, with some mild acid like monochloracetic acid, or glacial acetic acid, are all that is required and really useful. The stronger acids leave a scar tissue in the nasal passages, which gives rise to very annoying scab formations, which may last a long while without cure; also, the function of olfaction may be impaired and occasion distress later.

When the nasal passages have been freed sufficiently, a mild alkaline cleansing spray, repeated daily or several times a week for a while, will do much to get the anterior nasal passages in good shape.

The follicular disease of the postnasal space gives rise to much hawking and spitting, and diminution and change in the amount of secretions localized there may be attained in the most effective way by repeated applications of tincture of iodine and glycerin, one part to two parts, repeated every other day for two or three weeks, and later at longer intervals.

Of course, if a pronounced adenoid growth is present, it should be removed, and the same is sometimes true of enlarged tonsils. When the mouth and teeth are kept in an habitual healthy condition, these operations are not as frequently necessary as is usually believed. It is surprising at times, how soon the tonsils cease to be troublesome when the oral cavity and the stomach and bowels are properly attended to.

There can be no doubt that a certain proportion of people have a catarrhal diathesis which is marked and which must be combated by anticatarrhal remedies internally and sometimes locally. The most usefui of these remedies is, in my judgment, cubebs. Freshly powdered and given internally it is very beneficial. Applied locally, with camphor, glycerin, and petrolatum in the form of the oleoresin, I have many times known it to be very valuable in causing great relief from obstruction and nasal discharge. In summer, sulphur inhalations at one of the well known spas abroad or even at home, may promote a lasting cure.

I am convinced that I have helped many a sufferer by insistence upon the repeated use of the perforated zinc inhaler with some pleasing formula of pine needle oil, or compound tincture of benzoin.

The nasal douche is radically bad and should not be used. A hand ball atomizer is preferable, if cleansing is needed.

Dr. G. Thomas Coleman, of Marshall, Texas, remarks:

Before entering upon a discussion of this important malady I would not feel justified in beginning a discourse upon the treatment without first enumerating those conditions which we consider the main predisposing and exciting causes. The causes of this condition are first the predisposing. Under this heading I shall class (a) excessive changes in the weather, a low and damp habitation, those occupations which give rise to foul odors, dust, and irritating gases, impure air with improper breathing space, chronic digestive troubles, amygdalitis, mucous growths in the nares or pharynx, hereditary predisposition, rickets, and all exhausting conditions. Under the exciting causes we might name dust, gases, irritant bacteria, and frequent acute nasal catarrh.

Having thus considered the most frequent causes of this malady our treatment must resolve itself into the prophylactic, general, and local treatments.

Under the first I would place: 1. The patient should seek a climate as equable as he can afford it, and when this is impossible or inconvenient he should wear clothing proportionate to the changes in the weather where he resides. 2. He should avoid sudden changes in the weather or his clothing. 3. The bowels should be carefully regulated. 4. Systematic exercise of the entire body with frequent bathing followed by vigorous rubbing. 5. Avoidance of occupations which tend to keep the patient continually exposed to dampness, dust, or irritating gases. 6. Out of door life as much as possible accompanied with well regulated breathing exercises. 7. The removal of digestive troubles which frequently accompany this condition. 8. Correction of local conditions as pharyngitis, amygdalitis, deviated septum, mucous polypi. 9. Correction of excessive habits, as smoking, chewing, or addiction to alcoholics.

In the treatment of this condition we must take into consideration the fact that we are treating a patient suffering from chronic nasal catarrh and not especially treating the local condition. In the young the treatment must necessarily vary somewhat from that of the adult. In the child in whom the condition is especially dangerous from its being an entrance for the more virulent conditions, we must direct our attention to the general health of the individual. A predisposition to tuberculosis should receive appropriate treatment, as good food, good hygiene, and tonic treatment. The syphilitic child should receive the same with specific treatment. Special care must be exercised in these cases to prevent as far as possible extension to the Eustachian tube and middle ear. In these children practically the only local treatment should consist of frequent washing of the nasal cavities with a weak salt solution, this to be given by a person experienced or who has been instructed in the method of its administration. After these washings the application to the nasal cavity of liquid petrolatum is all that is necessary; in older children menthol in small quantities may at times be incorporated in the simple ointment. The prophylactic treatment as enumerated should be enforced as nearly as can be considerate. In the adult the same general principles should be adhered to, and here we can depend more upon the general medical treatment than in the case of the average child. Tonics, as nux vomica, iron, gentian, quinine, etc., should compose the main general medicinal treatment.

Since this condition is usually made manifest as a local disease we must in nearly all cases resort to some form of local treatment. Having removed any local condition previously enumerated as nearly as possible, we should instruct the patient to wash the nasal cavities, once or twice a day, with a spray composed of simple, warm, salt solution. At night, before retiring, the following, in the form of a spray, should be used thoroughly in each nostril:

℞ Menthol, ...gr. ii;
Tincture of iron chloride, ...ʒiii;
Glycerin, ...ʒiv;
Water, ad .....ʒiv.
M. S. as directed.

This much of the treatment we can usually leave to the proper care of the patient. In conjunction with this mild treatment the patient should come to the office to receive the following treatment, which is applied on cotton swabs to the entire nasal cavity with the aid of a mirror.

℞ Menthol, ...gr. viii;
Cocaine hydrochloride, ...gr. iv;
Tincture of iron chloride, ...ʒiss;
Camphor, ...gr. xx;
Glycerin, ...ʒi.
M.

Where this application proves excessively irritating it can be weakened by the simple addition of glycerin. Much depends upon the proper conduction of the local treatment to prevent extension to the Eustachian tube and middle ear, and after all this is the most serious local sequela, but without proper attention being given to the personal hygiene and general treatment of the individual and the removal of all predisposing causes we cannot hope but to attain a temporary amelioration of the symptoms dependent upon this disease.

(To be concluded.)

Therapeutical Notes.

REMEDIES OF RECENT INTRODUCTION

(Continued from page 527.)

Tyramine is a new active principle of ergot—parahydroxyphenylethylamine — the chief active principle of aqueous extracts of ergot. It causes a marked rise of blood pressure, with greatly improved vigor of the heart's action. It is administered hypodermically in doses of three drops gradually increased to forty.

Vanadozon is vanadic anhydride and sodium chloride.

Varicole is the brand name of bismuth iodoresorcin sulphonate. It is marketed as a suppository in combination with tannic acid, calcium chloride, zinc oxide, balsam of Peru, and cacao butter. Recommended in hæmorrhoidal diseases.

Xerase is a yeast preparation, described as a mixture of chemically pure dry yeast, with sugar and nutritive salts. It is used in septic conditions of the female genital tract.

(To be continued.)

NEW YORK MEDICAL JOURNAL
INCORPORATING THE
Philadelphia Medical Journal
and The Medical News.

A Weekly Review of Medicine.

Edited by
FRANK P. FOSTER, M. D.

Address all business communications to
A. R. ELLIOTT PUBLISHING COMPANY,
Publishers.
66 West Broadway, New York.

Cable Address: Medjour, New York.

Subscription Price:

Under Domestic Postage Rates, $5; under Foreign Postage Rate, $7; single copies, fifteen cents.

Remittances should be made by New York Exchange or post office or express money order, payable to the A. R. Elliott Publishing Co., or by registered mail, as the publishers are not responsible for money sent by unregistered mail.

Entered at the Post Office at New York and admitted for transportation through the mail as second-class matter.

NEW YORK, SATURDAY, SEPTEMBER 24, 1910.

RESTRICTING THE SALE OF MORPHINE.

By an ordinance adopted at a meeting of the Board of Health of the city of New York, held on August 26th, the sale of morphine or its salts, either alone or in combination with other drugs, is prohibited save on the prescription of a regularly licensed physician. This ordinance was intended to put a check on the sale, not only of morphine and its salts, but of the thousand and one proprietary and popular household remedies into the composition of which this drug enters.

The pharmacists, as we understand it, raise no objection whatever to the enactment of a law forbidding the indiscriminate sale of morphine and its salts. To their credit be it said, in many States the pharmacists have taken the initiative in the introduction of laws regulating the sale of narcotic and habit forming drugs. Indeed, the first step in the present campaign for the control of the sale of narcotic drugs was taken by the American Pharmaceutical Association, which nine years ago appointed a committee "to consider the question of the acquirement of drug habits and the best methods of legislative regulation of the danger," which committee was continued from time to time and drafted an antinarcotic law which has served as a model for legislative enactment in many States.

But the pharmacists, as we learn, do object to the introduction of regulations which are local in their action, as in the present instance, being confined to the city of New York alone, and not covering the remainder of the State; and they further object to the interdiction of the sale of such popular household remedies as brown mixture, the "*Sun* cholera mixture," and lead and opium wash, and ask that they be given a hearing, as is customary in legislative enactment, before any such drastic ordinance is enforced.

There has long been a need for greater restriction of the sale of morphine and of the various proprietary medicines containing opium and its derivatives. From the medical point of view the restrictions cannot be too severe. In fact, it would probably be better for the health of the public if no one could buy any medicine of any kind without the prescription of a reputable physician, for on the whole there is probably more harm than good done by self medication. But we are scarcely so far on our road toward paternalism as to warrant such action at present, and the public will probably resent any marked step in that direction as an infringement of the rights of the individual.

COCAINE CERTIFICATES.

The dispensing pharmacists of the State of New York have been placed in an awkward position by a law enacted by the legislature of New York last spring which requires the dispenser to retain any prescription which he may receive for cocaine and to furnish to the purchaser a certificate stating the name and address of the person selling the drug, the name and address of the physician upon whose prescription the drug is sold, the date of the sale, and the amount sold. Failure to comply with this extraordinary regulation constitutes a felony and under the laws of New York is punishable by imprisonment for not more than one year or a fine of not more than $1,000 or both.

It is needless to say that the law has caused much annoyance, both to physicians and to pharmacists, and, however good the intent with which it was framed, its enforcement will be accompanied with constant friction. In fact, we doubt if any large proportion of the retail drug trade has endeavored to carry out the law, in so far as furnishing certificates is concerned. One pharmacist who did comply with this requirement received a call from the prescriber, who came in in a towering rage and in the presence of the patient berated the pharmacist as an interfering busybody who had overstepped the bounds of his duties and privileges. The pharmacist, being a gentle and mild mannered man, vastly afraid of losing the good will of the prescriber, endeavored, meekly but unavailingly, to convince the prescriber that he was merely complying with the law.

We made note of this extraordinary piece of legislation at the time of its enactment, but wish to call the attention of the medical profession again to the existence of this absurd statute, in the hope that we may save some prescriber from placing himself in an awkward position and from unjustly blaming the dispenser for doing what he is required to do by law.

THE MECHANISM OF MUSCULAR TONE.

A physiological problem which has never been very satisfactorily explained is that of the manner in which unstriped muscle, such as is found in the coats of bloodvessels, in sphincters, etc., is enabled to maintain a continuous action without manifesting the phenomena of fatigue. It is a well known fact that, when excised, plain muscle may be stimulated to a point of fatigue as readily as striped muscle. D. F. Lingle (*American Journal of Physiology,* xxvi, 5), in an interesting study of this question, points out that we are compelled to adopt ideas that are not in harmony with certain fundamental physiological facts, if it is accepted that the whole tissue remains "in a state of partial or slight activity, which varies from time to time, and may be increased or diminished from a certain mean." Histological studies carried out by Lingle on the plain muscle from the intestine, stomach, and sphincter of the stomach of the frog and pecturus, and from the turtle's heart, with special reference to the degree of activity of the tissue, furnished some suggestive evidence on this point.

The nuclei of resting muscle cells are known to be elongated and slender, while those of fully contracted cells are short and oval. In Lingle's observations he never found all the cells contracting at the same time. In the strongly contracting sphincter most of the cells showed the short oval nucleus, but some of them were elongated and slender, while others seemed to be at an intermediary stage. The more nearly resting the muscle, the more elongated nuclei he found, and the fewer short nuclei. He believes, therefore, that the strength of the tone depends more upon the number of elements in activity than upon the degree of contraction of the individual elements, and that the structures involved "work, are fatigued, and are restored by periods of rest like all other tissues, but that the tone itself does not show fatigue, because of the peculiar way in which the apparatus is used." If this interesting deduction is true, there remains to be solved the question of the manner in which the necessary number of fibres are stimulated to contract at any given time.

THE HOUSEHOLD HANDLING OF MILK.

The Department of Agriculture has recently issued Farmers' Bulletin 413, entitled *The Care of Milk and its Use in the Home.* It consists of three essays, the first of which, by Mr. George M. Whitaker, of the Dairy Division of the Bureau of Animal Industry, deals with the care of milk in the home. It is best to buy milk in bottles, says Mr. Whitaker, and it is a bad practice to dip milk from large cans and pour it into customers' receptacles on the street, with the consequent exposure to dusty and perhaps otherwise dirty air from the time of delivery, often as early as 4 a. m., until 9 or 10 o'clock. If milk cannot be obtained in bottles, it should be delivered directly to some member of the family if possible. If this is out of the question, a bowl covered with a plate may be set out or, better still, a glass preserving jar with a glass cover but with the rubber band omitted. Nothing but milk should be put into the bowl or jar.

When the milk has been received, it should be put into the refrigerator at once, and there it should remain in its original receptacle except when it is necessary to pour some of it out for immediate use. Except in cold weather, milk cannot be kept properly without ice. Unless the bottle can be placed in actual contact with the ice, it had better be put at the bottom of the refrigerator instead of into the ice compartment, as the cold air settles rapidly. Milk should not be exposed uncovered in a refrigerator containing other food of any kind. If milk is not served on the table in the original bottle, as little of it as will be consumed at one meal should be poured out. Exposure of milk to the open air leads to its contamination with odors or dust, probably containing bacteria which may be pathogenic, also to the access of flies, which frequently convey to it large numbers of the bacteria that cause intestinal disorders in infants and even typhoid fever. "An examination of 414 flies showed an average of 1,250,000 bacteria per fly."

The refrigerator should be inspected at least once a week, in order that it may be kept clean and sweet. Special care must be taken that the outlet for water formed by melting of the ice be kept free and the space under the ice rack clean. As soon as a milk bottle is empty it should be rinsed in lukewarm water and stood on its top to drain, but it is unnecessary to scald it, for the producer will do that when it reaches him. But he cannot be relied on to cleanse a filthy bottle properly, and the return of such a bottle may result in the subsequent delivery of contaminated milk to some consumer, possibly the one who returned the foul bottle. All utensils with which milk comes in contact should be rinsed,

washed, and scalded every time they are used. Fresh water must be used for the purpose, and it is better to let the utensils drain unwiped than to wipe them with an ordinary dish towel.

When a baby is bottle fed, every time the feeding bottle and nipple are used they should be rinsed in lukewarm water, washed in hot water to which a small amount of washing soda has been added, and then scalded. A rubber tube connecting the bottle and the nipple should never be used, and bottles with covers should not be tolerated. If typhoid fever, scarlet fever, diphtheria, or any other infectious disease breaks out in the family, no milk bottles should be returned to the milkman unless with the knowledge of the attending physician and under precautions prescribed by him. The pasteurization of milk should not be regarded as a safeguard against its subsequent contamination, and pasteurized milk should be treated with all the care demanded in the case of other milk. Milk should not be kept for more than twenty-four hours, even if it seems to be sweet, for it may become unfit for human consumption before it sours.

BOARDS OF HEALTH AND DISINFECTION.

At the recent meeting of the American Public Health Association provision was made for an inquiry into the advisability of official disinfection of apartments in which subjects of infectious disease have gone through their illness. A committee was recommended to conduct the investigation—as the resolution read, "to study the end results and practice in communities where terminal disinfection is no longer practised at the conclusion of cases of communicable disease."

The resolution emanated from the Municipal Health Officers' Section, and it was recommended that the Executive Committee appoint the special committee called for. In the preambles it was stated that a considerable number of municipal health officers believed that such disinfection was "of questionable value and extravagant in practice," and that a few municipal health officers "of sound judgment and highest attainments" had abandoned the practice as a prophylactic measure.

We have long been of the opinion that some of the rigors of compulsory sanitation might be done away with without detriment to the community and with decided relief to the unfortunate families in which cases of communicable disease had occurred. We are not alone in this conviction, as appears by the action of certain municipal health officers in abandoning the practice in question and by a vigorous protest made some months ago by a Parisian physician before a medical society against the nonsensical and vexatious antics of a Paris sanitary inspector at the conclusion of a case of measles. It is quite true that regard for the public welfare demands sacrifices on the part of the individual, but they cannot be justly insisted upon unless they are incontrovertibly necessary. Legislation has conferred immense powers on our boards of health, and we fear that those powers have not always been exercised in a humane manner. We are glad, therefore, to see in this action of the Municipal Health Officers' Section of the American Public Health Association a movement on the part of such officers themselves toward making sure with regard to their duties in cases of infectious disease.

Of course the proposed committee will be appointed, and it will doubtless be composed of men of unbiased opinion. We are inclined to think that it will report in favor of at least some relaxation of the severe measures now generally carried out. Perhaps some diversity of procedure will be recommended in accordance with the nature of the disease; possibly, for example, smallpox will be held to call for more rigorous methods than the other acute infectious diseases.

BACILLARY DERIVATIVES AND OTHER SPECIFICS.

In Passed Assistant Surgeon A. M. Stimson's masterly essay entitled *Facts and Problems of Rabies*, recently issued by the Public Health and Marine Hospital Service, we find a suggestive remark to the effect that, striking as have been the results of the use of tuberculin, antidiphtheritic serum, etc., they are quite matched by those of the specifics which are not made by culture methods, such as quinine in malarial disease, mercury in syphilis, and arsenic in sleeping sickness; and the latter find their field of efficiency in diseases which are of protozoan rather than bacillary origin. It seems not unreasonable to suppose, indeed, that any infectious disease for which a specific is found in either the vegetable or the mineral kingdom will turn out to be due to an animal microorganism.

A PHYSICIAN'S TRAVELS.

Under the title of *Touring the Lands Where Medical Science Evolved*, Dr. Robert G. Eccles, of Brooklyn, has put forth an attractive little volume bearing the imprint of the *Medical Fortnightly*, of St. Louis. The text is chatty and interesting, and the illustrations are informing. Among the pictures is a frontispiece representing Dr. and Mrs.

Eccles in the Alhambra. Dressed in his Moorish toggery and bearing a long Arabian gun, the ordinarily genial Dr. Eccles looks very serious, not to say fierce, but we fancy we detect a suppressed smile on Mrs. Eccles's face, and perhaps it was by way of reproof that Dr. Eccles accentuated his ferocity.

News Items.

Changes af Address.—Dr. Leonard Weber, to 132 West Seventy-third Street, New York.

Dr. Cary Eggleston, to 171 West Ninety-fifth Street, New York, after October 1st.

Managers of State Hospitals.—Among the appointments made by Governor Hughes on Saturday, September 17th, were the following: Lewis R. Parker, of Albany, a manager of the Hudson River State Hospital; Julia Kent West, of New York, a manager of the Manhattan State Hospital, and J. Howard Wainwright, of Rye, a manager of the Mohansic State Hospital.

Boston's Open Air School to be Discontinued.—On November 1st the open air school which has been conducted for about a year in Franklin Park will be discontinued. The trustees state that while they are satisfied with the manner in which the school has been conducted, they do no deem it wise, in the interests of the city, to continue it further until other things are done.

A Consolidation of Medical Journals.—Announcement is made that on January 1, 1911, the Kansas City *Medical Index-Lancet* will be merged with the *Medical Herald*, thus bringing about a consolidation of two of the oldest independent medical journals in the West. The consolidated journal will be under the editorial direction of Dr. Charles Wood Fassett, of St. Joseph, and Dr. S. Grover Burnett, of Kansas City.

To Test the Vaccination Law in Washington, D. C.—To establish on federal territory the question of the constitutionality of the compulsory vaccination law, the anti-vaccination society of Washington announces its intention of making a test case of the eight year old daughter of Mr. Charles Castle, who was refused admittance to the public schools last year and again this year on account of not having been vaccinated. Mandamus proceedings will be started at once.

Society Meetings for the Coming Week:

MONDAY, *September 26th.*—Medical Society of the County of New York.

TUESDAY, *September 27th.*—New York Dermatological Society; the Metropolitan Medical Society of New York City; Buffalo Academy of Medicine (Section in Obstetrics and Gynæcology); New York Medical Union.

THURSDAY, *September 29th.*—Brooklyn Society of Neurology.

The American Association of Obstetricians and Gynæcologists.—At the twenty-third annual meeting of this association, held in Syracuse, N. Y., on Tuesday, Wednesday, and Thursday, September 20th, 21st, and 22d, the following officers were elected for the ensuing year: President, Dr. Herman E. Hayd, of Buffalo; first vice-president, Dr. Henry Schwarz, of St. Louis; second vice-president, Dr. Lewis C. Morris, of Birmingham, Ala.; secretary, Dr. William Warren Potter, of Buffalo, reelected; treasurer, Dr. Xavier O. Werder, of Pittsburgh. Louisville, Ky., was selected as the next place of meeting.

The American Electrotherapeutic Association held its twentieth annual meeting in Saratoga Springs, N. Y., on September 13th, 14th, and 15th, under the presidency of Dr. Thomas D. Crothers, of Hartford, Conn. There was a large attendance of members and an excellent programme of scientific papers was presented. The meeting was in every way one of the most successful ever held by the association. The following officers were elected for the ensuing year: President, Dr. Frederick de Kraft, of New York; vice-presidents, Dr. F. Howard Humphris, of London, and Dr. Frank B. Granger, of Boston; treasurer, Dr. Emil Heuel, of New York; secretary, Dr. J. Willard Travell, of New York, reelected; registrar, Dr. Frederick M. Law, of New York; trustees for three years, Dr. Charles R. Dickson, of Toronto, and Dr. Thomas D. Crothers, of Hartford, Conn.

The Tri-Professional Medical Society of New York.—A stated meeting of this society was held in the Hotel Astor on Tuesday evening, September 20th. The business of the convention included the nomination and election of officers for the ensuing year. The chief feature of the scientific programme was a paper entitled Some Remarks on Sexual Debility in the Male, by Dr. Terry M. Townsend and Dr. Julius J. Valentine. Among those who participated in the discussion were Dr. G. Morgan Muren, Dr. Frederic Bierhoff, Dr. Boleslaw Lapowski, and Dr. G. M. MacKee.

A Floating Hospital for the New England Coast.—Dr. L. L. Williams, of the Public Health and Marine Hospital Service, in a report to the surgeon general, asks for an appropriation of $20,000 to cover the cost of fitting out a schooner with a complete emergency hospital equipment for the care and treatment of fishermen and sailors on the New England coast. The crews of the Massachusetts fishing fleets number more than six thousand men, and the average number out on the banks during the winter varies from 1,500 to 2,000. The cost of maintaining such a floating hospital is estimated at about $10,000 a year.

The Philadelphia County Medical Society.—At a meeting of the Kensington Branch of this society, held on Friday, September 16th, the evening was devoted to a discussion of the subject of pellagra. Dr. Samuel Stern presented an interesting paper on the subject, and Dr. Frank Crozer Knowles opened the discussion. The South East Branch of the society met on the same evening and elected the following officers: Chairman, Dr. M. Staller; vice-chairman, Dr. Aaron Brav; clerk, Dr. M. B. Cooperman; chairman of the Scientific Committee, Dr. S. Wendker. The chief feature of the programme was a paper on the virus industry of America, followed by a general discussion of current topics.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Department of Health for the following statement of new cases and deaths reported for the two weeks ending September 3 and September 17, 1910, respectively:

	September 3d.		September 17th.	
	Cases.	Deaths.	Cases.	Deaths.
Tuberculosis pulmonalis	523	141	617	148
Diphtheria and croup	185	12	143	8
Measles	82	5	60	6
Scarlet fever	64	4	83	2
Smallpox	..	..	..	..
Varicella	3	..	19	..
Typhoid fever	169	22	165	12
Whooping cough	29	15	60	3
Cerebrospinal meningitis	7	8	3	6
Total	962	207	1,150	185

Dr. Sydney Stephenson Entertained.—A dinner in honor of Dr. Sydney Stephenson, the well known ophthalmologist of London, England, was given at the St. James Hotel, Philadelphia, on Wednesday evening, September 14th, by Dr. Wendell Reber. Among the guests were Dr. Samuel D. Risley, Dr. H. F. Hansell, Dr. W. N. Sweet, Dr. W. T. Shoemaker, Dr. William Zentmayer, Dr. P. L. Ballentine, Dr. S. Lewis Ziegler, Dr. Webster Fox, Dr. Walter Pyle, Dr. Burton Chance, and Dr. Joseph McCool. On the following day Dr. Stephenson was the guest of honor at a luncheon given by Dr. William Campbell Posey at the University Club, and in the evening he was the guest of Dr. S. Lewis Ziegler at a dinner at the Union League Club.

Cholera Epidemic Spreading Through Asiatic Russia.—The cholera epidemic which, originating in Southern Russia, has claimed already upward of 100,000 victims, is stretching its way across Asiatic Russia, and to-day was officially declared to threaten the Province of Amur, in southeast Siberia, and separated by the Amur River from Manchuria. The reports now in possession of the Sanitary Bureau show a total for the season of 182,327 cases, with 83,613 deaths. These include the early returns for the week ending September 17th, and the revised figures for the preceding week. Complete reports for the week of September 4th to September 10th, inclusive, are lacking, but the totals for the seven days at hand are 7,559 cases, with 3,557 deaths. The totals for the preceding week are 13,330 cases, with 6,187 deaths. On September 15th there were 47 new cases and 19 deaths in the city of St. Petersburg. This brings the total in the capital up to 3,750 cases, with 1,310 deaths. The total in the aggregate show a falling off of cases and deaths.

Vital Statistics of New York.—During the week end-September 10, 1910, the deaths from all causes reported to the Department of Health of the City of New York numbered 1,402, corresponding to an annual death rate of 15.52 in a thousand of population, as compared with a rate of 15.05 for the corresponding week in 1909. The annual death rate for the week in each of the five boroughs was as follows: Manhattan, 15.38; the Bronx, 18.47; Brooklyn, 14.96; Queens, 17.19; Richmond, 11.84. There were 118 stillbirths. The deaths of children under five years of ago numbered 538, of whom 403 were under one year of age. The deaths from diarrhœal diseases under five years of age numbered 224; over five years of age, 237. There were 17 deaths from suicide, 8 from homicide, 9 from sunstroke, and 62 from accidents.

Diphtheria in New York State in 1909.—The total mortalities of all cases of diphtheria treated by State antitoxine and reported are given in the following table:

Year.	1902. Per cent.	1903. Per cent.	1904. Per cent.	1905. Per cent.	1906. Per cent.	1907. Per cent.	1908. Per cent.	1909. Per cent.
Mortality in all cases treated	8.3	8.6	8.5	8.4	9.5	9.6	10.6	10.7

The vital statistics for the year 1909 for the State of New York, based on a population of 8,699,643, show that 2,036 deaths occurred from diphtheria and 108 deaths from tetanus. The mortality of diphtheria treated by State antitoxine for the last two years, is practically ten per cent. The deaths of 1909 in the State from diphtheria then, cannot have come from less than 20,360 cases. With a State population of 8,700,000 approximately, by this calculation, there were, at least, 235 cases of diphtheria for every one hundred thousand people in the State. The population of the State outside of Greater New York is four and a half million; and, consequently, these figures would show that 10,500 cases of diphtheria occurred in 1909 in that population.

The Health of Chicago.—During the week ending September 10, 1910, the following new cases of and deaths from transmissible diseases were reported to the Department of Health of Chicago: Typhoid fever, 68 cases, 14 deaths; measles, 13 cases, 2 deaths; whooping cough, 37 cases, 3 deaths; scarlet fever, 70 cases, 3 deaths; diphtheria, 100 cases, 13 deaths; chickenpox, 4 cases, 0 deaths; tuberculosis, 83 cases, 62 deaths; pneumonia, 10 cases, 48 deaths; German measles, 2 cases, 0 deaths. Twelve cases of diarrhœal diseases were reported, and 8 cases of contagious diseases of minor importance were reported, making the total number of cases reported, 407, as compared with 416 for the preceding week. The deaths under two years of age from diarrhœal diseases numbered 157. There were 29 deaths from congenital defects and accidents. The total deaths of children under five years of age numbered 257, of whom 177 were under one year of age. The total deaths from all causes, exclusive of stillbirths, numbered 636, corresponding to an annual death rate of 14.5 in a thousand of population.

Local Epidemics.—The public schools of Middletown, Conn., have been ordered closed for an indefinite period by the Board of Education owing to the presence of an epidemic of infantile paralysis which developed during the past week. Fourteen cases were reported up to September 20th, with three deaths.

According to reports received by the State Department of Health of Pennsylvania there are 658 cases of infantile paralysis in forty-five of the sixty-seven counties of the State. The largest number of cases is in Lancaster County, where they number 135. Seventy-nine cases have been reported in Philadelphia.

An epidemic of diphtheria in Westfield, Mass., has become so serious that the health authorities and school committee decided that four of the largest schools should be closed, giving an enforced vacation to fifteen hundred pupils. Thirty-five cases of the disease have been discovered thus far, from which five deaths occurred within a week. The epidemic has been confined to the Polish district, where the health authorities have found it difficult to enforce sanitary precautions.

According to press despatches an epidemic of scarlet fever has developed in Winnipeg, Canada, during the past two weeks, and already six deaths have been reported. Two hundred cases have been reported, and one public school has been closed.

American Public Health Association.—At the thirty-eighth annual meeting of this association, held in Milwaukee on September 6th, 7th, 8th, and 9th, the following officers were elected: President, Dr. Robert M. Simpson, of Winnipeg, Manitoba; first vice-president, Dr. Fernando Lopez, of Mexico City; second vice-president, Dr. John F. Anderson, of Washington, D. C.; third vice-president, Dr. B. A. Bading, of Milwaukee; secretary, Dr. William C. Woodward, of Washington, D. C.; treasurer, Dr. Frank W. Wright, of New Haven, Conn. *Laboratory Section.*—Chairman, Dr. J. F. Amyot, of Toronto, Canada; vice-chairman, Dr. John F. Anderson, of Washington, D. C.; secretary, Mr. B. R. Rickards, of Columbus, O.; recorder, Dr. H. D. Pease, of New York. *Vital Statistics Section.*—Chairman, Dr. Wilmer R. Batt, of Harrisburg, Pa.; vice-chairman, Dr. C. V. Chapin, of Providence, R. I.; secretary, Dr. F. L. Watkins, of Columbus, O. *Municipal Health Officers' Section.*—Chairman, Dr. A. J. Douglass, of Winnipeg, Manitoba; vice-chairman, Dr. Frederic Torralbas, of Havana, Cuba; secretary, Dr. E. C. Levy, of Richmond, Va. Havana, Cuba, was selected as the place for holding the next annual meeting.

The Date of the Next Meeting of the American Medical Association.—It has been suggested by the chairman of the Board of Trustees that perhaps it will not be desirable to hold the next meeting of the association during the first week in June, as has been the custom for many years past. On account of the meeting place being Los Angeles, the majority of those who attend will be obliged to travel a great distance, consequently it is essential that the date fixed upon shall be one which will accommodate the greatest number. If the meeting is held in the first week in June, it will conflict with the examinations and commencement exercises of a large majority of the medical colleges throughout the country, and the question to be decided, therefore, is whether the meeting should be held early enough in April or May to permit those living in the East to attend and return in time to close up their college work for the year, or late in June or early in July, after the college work is over. The local weather bureau of Los Angeles gives assurance that weather conditions late in June or early in July will probably not be unfavorable, so that there need be no fear of meeting with excessively hot weather. The board of trustees is desirous of fixing upon a date which will accommodate the greatest number and has issued a request that all who are interested in the date of the meeting will please indicate by postal card or letter, the date on which it will be most convenient for them to attend.

To Raise the Salaries of Yale Professors.—At a meeting of the Yale University Corporation, held in New Haven on September 19th, the question of raising the salaries of the professors was discussed. A sum of $50,000 contributed by the alumni to the alumni association last spring was announced as available for this purpose. Of this sum $10,000 was set apart last spring for the salary increases and of the remainder one third has been appropriated to increase the salaries of the assistant professors and the remaining two thirds those of the full professors. The new salary scale continues instructors at from $1,000 to $1,600; increases assistant professors on the first term of appointment from $1,800 to $2,000; sets $2,500 as the nominal scale for the second appointment of the assistant professors and reduces the period of the second appointment from five years to three years, making $3,000 the normal salary for an assistant professor after the expiration of his second term. In the case of professors normal grades of $4,000, $4,500, and $5,000 were adopted, with the length of service, university responsibility and individual distinction as a scholar or teacher forming the criteria for an increase. On this plan twelve professors were placed on a maximum salary of $5,000 and a slightly larger number on the $4,500 basis. Gifts to Yale University totaling $60,000 were announced. The largest was one of $50,000, from the estate of J. B. Collins, of Fort Worth, Texas. Dr. Alexander Petrunkevitch, at present an honorary curator in the American Museum of Natural History, was appointed an instructor in zoology in the Sheffield Scientific School. In the medical school Dr. Yandell Henderson was promoted to a full professorship in physiology. Mason Trowbridge, of the class of 1902, was chosen to give instruction in debating in the college, and Professor Charlton Lewis was granted leave of absence for the present university year.

Pith of Current Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL.

September 8, 1910.

1. Indications for Abdominal Hysterectomy, By W. B. Graves.
2. Twenty-one Cases of Acute Pancreatitis, By F. G. Balch and G. G. Smith.
3. Some Observations on the Surgery of the Vascular System, By Joshua C. Hubbard.
4. Two Unusual Cases of Disease of the Maxillary Antrum, By J. Payson Clark.
5. Certain Aspects of the Bacteriology of Bacillary Dysentery, By Arthur I. Kendall.

1. Indications for Abdominal Hysterectomy.—Graves remarks that the danger to life in the average operation of hysterectomy is not a particularly serious one, as is shown by the fact that in his series of one hundred cases there was only one death, which occurred in a case operated in for septic uterus, the patient having at the time of the operation an extensive peritonitis which would have proved fatal without operation. Shock and hæmorrhage should occur only in operations of great gravity, as, for example, in advanced cancer or in conditions of very extensive adhesions. The accidents which may happen, aside from hæmorrhage and shock, are represented by the following: In two cases one of the ureters was cut. In two cases of cancer of the cervix where the disease had infiltrated the bladder wall, the bladder was opened and partially resected; both cases resulted in a vesicovaginal fistula, one of which healed spontaneously; the accident in these two cases was unavoidable. In one case of a large fibroid the bladder which was adherent to the anterior portion of the fibroid was accidentally opened; the rent was repaired, and the patient made an uneventful recovery excepting for a temporary cystitis; the accident in this case should have been avoided. The complications which may follow hysterectomy are represented by the following. Three cases had an infiltration of blood in the broad ligament, which caused some discomfort for several weeks following the operation. In one patient an abscess developed in the broad ligament following operation for purulent pelvic inflammatory disease. The abscess was opened by a vaginal puncture, and the patient recovered. Vesicovaginal fistula occurred in two of the cancer cases, one of them healing spontaneously. Cystitis occurred in two fibroid cases. One patient had pleurisy from which she recovered, and three cases had stitch abscesses, two of them being cancer of the cervix cases. With regard to the question of the comparative merits of the abdominal and vaginal route, he is unqualifiedly in favor of the abdominal route for practically all cases.

2. Pancreatitis.—Balch and Smith state that almost all the acute diseases of the pancreas begin as an acute hæmorrhagic inflammation, accompanied usually by free fluid in the peritoneal cavity and by disseminated fat necrosis. Operation is the treatment indicated, unless the patient is in such severe collapse that the additional shock would surely be fatal. The object of operation is to drain the pancreatic secretion and the products of infection; this is best done by incising the tissue of the gland, as advised by Porter, and by carrying the drainage through the gastrohepatic omentum, close above the lesser curvature of the stomach.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

September 17, 1910.

1. The Proposed Enlarged National Public Health Organization, By George B. Young.
2. Extra Capsular Fixation of the Movable Kidney, By Charles A. L. Reed.
3. Further Report on Ileocolitis Complicated by Acidosis, By Thomas D. Parke.
4. Syphilitic Disease of the Arteries of the Central Nervous System with Report of a Case, By E. M. Hummel.
5. A New Method of Vaccination, By Sigmund Wassermann.
6. A Modification of the Young Prostatic Tractor, By Harvey A. Moore.
7. Cobweb Brain, A Contribution to the Pathology of Idiocy, By Edward Livingston Hunt.
8. Unusual Site of Typhoid Perforation, By N. C. Bledsoe.
9. Sporotrichosis, By Richard L. Sutton.
10. Tumors of the Hypophysis, By Dean D. Lewis.
11. Clinical and Röntgenographic Study of the Essential Differences between the Physical Findings in Childhood and Adult Life, By Louis A. Levison and Harry Dachtler.
12. Pathology and Bacteriology of Acute Anterior Poliomyelitis, By H. E. Robertson and A. J. Chesley.
13. Surgical Treatment of Infantile Spinal Paralysis, By David Silver.
14. Bronchial Asthma as a Phenomenon of Anaphylaxis, By T. J. Meltzer.
15. Vomiting of a Gallstone, By J. M. Pfeiffenberger.

1. The Proposed National Public Health Organization.—Young remarks that a careful reading of the hearings before both the Senate and House committees, which have been considering the Owen and other bills, designed to coordinate and increase the public health activities of the general government, compels the conclusion that the committees obtained very little that would be of value in solving the problem before them. That problem may be stated to be the drafting of a law which will give adequate recognition to the importance of national public health work, and at the same time will avoid being made the instrument for exploiting the theories of a great variety of well meaning people whose preference for some particular plan of organization, or enthusiasm for some particular form of research or educational propaganda, is in inverse proportion to their knowledge of the limitations of national health legislation on both the practical and the constitutional sides. Young, therefore, makes the following suggestions:

1. The law should be as brief as possible, and should be confined to the declaration of certain basic legislative intentions, leaving the details to be arranged by regulations to be promulgated by the President. Such expression of legislative intentions should include: (*a*) Provision for the creation of a department, bureau, or service, as may be determined on, with a declaration of the fundamental principles in accordance with which the new department, bureau, or service is to be organized; i. e., either for a consolidation of the activities to be transferred or created with, or into, the Public Health and Marine Hospital Service; (*b*) provision for the head of the new department, bureau, or service, who he shall be, how he shall be appointed, his tenure of office and compensation; (*c*) an enumeration in the fewest possible words of the duties to be performed; (*d*) provision for the continuance of the personnel of the various existing agencies affected, for their salaries, allowances, etc., and provision for the personnel of any newly created agencies; (*e*) authorization

for the necessary clerks, etc., without stating salaries or numbers; (*f*) continuance in general term to the various agencies of the special authorities and duties now vested in them by law; (*g*) continuance of the availability of all appropriations, funds, etc. 2. It should for the present only transfer or consolidate existing or new agencies that are not the subjects of serious dispute on grounds of either expediency or constitutionality. The pharmacological laboratories of the Bureau of Chemistry, Animal Industry and Plant Industry, Agricultural Department, and the Library of Medicine and Surgery, War Department, are illustrations of the first class, and the study of the disposal of wastes with reference to their effects on interstate, water borne commerce and the health of those engaged therein, is an illustration of the second class. 3. In order to provide for the question of existing activities, the expediency of transferring which is the subject of much dispute, as for example, certain parts of the Bureau of Animal Industry, Treasury Department, a provision should be inserted authorizing such transfers within one year by Presidential order and providing for a commission or committee of departmental chiefs, or delegated subordinates, who shall advise the President of their findings after investigating each case referred to them, but whose advice shall not be binding on him. The law creating the Department of Commerce and Labor contains a provision somewhat similar to this, but if in the case under consideration this is thought to savor too much of the delegation of legislative authority, the President might merely report his findings for the approval of congress. All this sounds reasonably simple but it will involve a careful study of a large number of existing laws and no little legislative ingenuity to secure the results wished without loss of something desirable.

2. **Movable Kidney.**—Reed says that he has been induced to evolve and practise extracapsular fixation of the kidney because it is surgically feasible, it is effective primarily, it is generally practicable, and it comes nearer than any other procedure to restoring the pathologically movable kidney to its normal anatomical relations and to the exercise of its normal physiological functions. He urges it as the operation of choice as against certain other procedures that are yet prevalent because, among the latter, decapsulation is liable to induce and frequently does induce wholly unnecessary pathological changes resulting either in its loss or in the invalidism of either the kidney or the patient or both; transfixion sutures in the parenchyma may and often do induce similarly disastrous consequences; treatment of the surface of the kidney by irritating substances induce adhesions and tissue changes that are pathological in character; and in consequence of the greater liability to hæmorrhage and infection following all invasions of the true capsule and the parenchyma of the kidney and for other obvious reasons these procedures are more liable than extracapsular fixation to be followed by primary complications and final failure.

5. **New Method of Vaccination.** — Wassermann describes a new method of vaccination, which revolves around the instrument to be used, the scarifier devised by Professor von Pirquet for his cutaneous tuberculin test. It is a small chisel with the sharpened edge of which the drilling of the skin is surprisingly painless, hardly perceptible by children. The method is described as follows: Clean the arm with water and soap, and then rub it thoroughly with alcohol. Apply the vaccine lymph (pulp) on the skin by expressing a capillary tube or by smearing the lymph, in case one prefers the points. Point the chisel perpendicularly to the surface of the skin and press against it with a few rotary movements, or, as a child said, "use it like a screw driver." These few rotary movements suffice to produce both an abrasion of the skin and an implantation of a minimum amount of vaccine virus. Within a minute a little wheal, a typical, reddish urticarial papule with a central depression, is formed. It is a vasomotor reaction produced by the blunt pressure of the instrument. Here the operation should be ceased, that is when the superficial layers of the epidermis appear to be removed and a pinkish hue shines through from beneath (vessels on the pars papillaris corii). He has never seen a trace of blood oozing from the scarified skin, which is by no means an attribute of a successful vaccination, as some believe.

8. **Typhoid Perforation.** — Bledsoe reports a case in which a perforation during typhoid occurred in an unusual site. The autopsy revealed typhoid ulcers over the whole of the intestinal tract; the abdomen was full of thin fæcal matter; no perforation in the small intestine, or in the colon, but the fatal perforation was at the junction of the duodenum and the pylorus. On closer examination the perforation was found to be in the centre of radiating bands of adhesions, looking like an old duodenal ulcer; it had healed and the typhoid infection had attacked this portion of the intestinal tract, causing the perforation and death.

10. **Tumors of the Hypophysis.**—Lewis finds that the most common tumor of the infundibulum is that developing from inclusions of the craniopharyngeal duct. These may be cystic or solid. They are more frequently associated with Fröhlich's syndrome than any other type of intracranial tumor. The most common lesion of the hypophysis in cases of acromegaly is the struma or adenoma of the anterior lobe. In the early stages of the disease, the course having been interrupted by an intercurrent affection, a hyperplasia of the anterior lobe may be found. In cases of acromegaly in which there is no enlargement of the hypophysis careful histological examination as to the character of the cells should be made. In cases of acromegaly in which no gross or microscopic changes are found in the gland the examination should not be regarded as complete unless a careful search for and study of the pharyngeal hypophysis has been made. Tumors developing from the pars intermedia are rare, but three cases being reported. It is probable that some of the tumors arising from the pars intermedia may have been regarded as peculiar types of adenoma or sarcoma. Stains which distinguish granules should be used in examining all growths of the hypophysis in order that incorrect anatomical diagnosis may be avoided, for hypophyseal cells tend to reproduce the morphology of a sarcoma when proliferating. The specific granules will distinguish the hypophyseal cells from those of a sarcoma. Failure to recognize the morphology of the different elements in the hypophysis and their relation to tumor formation accounts for much of the confusion concerning the relation of the gland to acromegaly.

14. **Bronchial Asthma as a Phenomenon of Anaphylaxis.**—Meltzer observes that it is generally agreed that the so called nervous asthma is due to a stenosis of the bronchioli. It was discovered

that the so called anaphylactic shock is due also to a stenosis of the fine bronchi. The theory is offered that asthma is an anaphylactic phenomenon; that is, that asthmatics are individuals who are "sensitized" to a specific substance and the attack of asthma sets in whenever they are "intoxicated" by that substance. It has been proved that the anaphylactic attack is of peripheral and not of central origin. It is therefore suggested that the so called nervous asthma is also due to a peripheral and not a central cause; in other words, "nervous" asthma is not a neurosis. On account of the capriciousness of the onset and courses of asthmatic attacks, as well as on account of the absence of pathological anatomical changes in this affection, asthma was considered a functional disease and hence a neurosis. He thinks that asthma is still a functional disease but not a neurosis.

MEDICAL RECORD

September 17, 1910.

1. Psychological Study of Gangs, By Siegfried Block.
2. The Method of Simple Extraction of the Lens, By Francis Valk.
3. Deaths in Childbirth, By Frederick S. Crum.
4. Ainhum Complicating Uncinariasis Americana in an American White Girl, By Frank L. Eskridge.
5. A Suppurative Adenitis under the Sternocleidomastoid Muscle Treated with Streptococcus Vaccine, By F. Op. De Beeck.
6. An Improved Pharnygoscope, By August L. Beck.

1. Psychological Study of Gangs.—Block has examined one hundred members of gangs, and compared these young men with Columbia freshmen. Gang is the well known designation given to a company or band of young men, acting together, for a disreputable purpose. Although he cites many authors, Block does not not give a definition of a gang. He notes the marked inferiority in accuracy, memory, hearing, and tactile sensation in contrast to the Columbia freshmen. The gangs have in their favor only eyesight, speed, and estimation of time, and if a large number of subjects is taken different results may be obtained. When the finer faculties, as memory and accuracy, are taken into account, the students are by far superior. It is these qualities which make real class distinctions, and develop human endeavors in so marked a contrast to the rest of the animal kingdom. In other words, the theoretical and practical results of heredity and environment are again demonstrated and the problem which presents itself to us is to assist the members of the gangs to the higher level of the freshman. This can be done only by removing the causes of the inferiority. The heredity cannot be altered, but the environment can and must be changed.

3. Deaths in Childbirth.—Crum remarks that while it is not possible to state what proportion of confinement cases in the United States, or in any States, or in any given city, are likely to prove fatal, it would seem to be reasonable to assume that the ratio for all married mothers would vary from 4 or 5 to 10 or 15 per mille of all cases. The variation in the ratios would depend upon the average age of mothers and especially upon the proportion of the total confinements which were first confinements. Taken one with another, it is probably not far from the truth to assert that from 5 to 10 confinements out of every 1,000 are fatal to the mothers in this country at the present time.

4. Ainhum in an American White Girl.—Eskridge reports a case of ainhum in a white girl in Florida. The case is of interest because of the appearance of ainhum in the Southern States. Ainhum, says the author, is distinctly a tropical disease of unknown ætiology and heretofore reported in the negro race only. The disease is characterized by a painless amputation of one or more joints of one or more toes by a trophic process. This process is carried out by the formation of a slightly constricting band, or furrow, at the digitoplantar fold of either toe. This band or furrow becomes in time more pronounced, firmer, and more and more constricting, until the confined portion of the toe enlarges and loses its natural shape. Inflammation and subjective symptoms are markedly absent except in the infected cases. In those cases occasional pain is felt. The constricting band continues to narrow, tumefying the toe, until finally only a small pedicle remains, from which the toe usually sloughs off (unless surgically removed), leaving a smooth amputated surface. The amputated base heals nicely. When ulceration takes place the ulcer assumes a resemblance of a necrotic ulcer with a distinct nauseous odor. As advanced by Unna, the condition is a sclerodermic callosity, with ring formation, producing a stagnating necrosis. The tumefaction indicates a stagnation, resulting in degeneration, retraction, and finally disappearance of the phalanges. The disease sometimes covers a period of several years.

BRITISH MEDICAL JOURNAL

September 3, 1910.

1. Remarks on Mechanotherapy in Disease: With Special Reference to Osteopathy, By Alexander Bryce.
2. A Lecture on the Interpretation of X Ray Negatives, By A. Howard Pirie.
3. The Spread of Cancer among the Descendants of the Liberated Africans or Creoles of Sierra Leone, By W. Renner.
4. One Cause of Cancer as Illustrated by Epithelioma in Kashmir, By Ernest F. Neve.

3. Cancer Among the Creoles of Sierra Leone.—Renner says that cancer is rarely seen or met with among the hundreds of female aborigines who are treated regularly every year in the Colonial Hospital, and the medical officers of the protectorate districts, especially those who are stationed in large towns where there are established dispensaries at which the natives have been encouraged to attend for treatment, have in their official returns not shown the presence of new growths among their patients. We can, therefore, safely assume that cancer as a disease is very rare among the aborigines. But he does not say that the aborigines are immune from the disease, but that the disease is rare among them. With reference to the creoles in the colony proper, an examination of the records of hospital cases and those of medical practitioners show that within the last forty years cancer as a disease has been spreading among them. This he proves statistically. The existence of cancer and other malignant growths among the creoles and its absence or rarity among the aboriginies are due, in his opinion, to the civilized habits of, and the civilizing influences operating upon, the former, and to the primitive mode of living of the latter. The

creoles have adopted the mode of living, the food, and dress, of the European—have to a great extent discarded the simple food of their forefathers, have been craving for and indulging in preserved and imported foreign food—have substituted the European for the natural African environment, and entailed on themselves in their eager pursuit for wealth and luxury the anxieties and worries incidental to civilization and consequent liability to premature decline. While the creoles in a tropical country like Sierra Leone consume a large quantity of meat which is absolutely unnecessary, the aborigines confine themselves mostly to grain and vegetable, which really should form the bulk of the dietary of the native in the tropics, and eat very little of flesh or meat, with the result that the latter are on the whole healthier, and are free from the tendency to engender and propagate foreign diseases. The author states that cancer mostly appears as cancer of the breast. He then takes up the Gold Coast, and investigates the question how far European civilization has affected a large majority of the people there who are one in language, habits, and customs. These people have been in contact with European nations for five centuries. Their country was visited by the Phoenicians; they have had at various periods and for more or less long duration constant intercourse with the Danes, Dutch, Portuguese, Germans, and English, who have at intervals and in succession held and fortified their coast towns. Yet after so many centuries of close contact with Europeans, they have by virtue of their race instinct and race unity resisted as one people the inroads of European civilization into their social life, and as a result we find the absence or rather rarity of cancer and other new growths among them. How long this condition will last remains to be seen. Native customs die hard, but with the establishment of permanent peace in their country, the opening of their country by railways, the constant influx in increasing numbers of Europeans exploiting the country and working the mines, the equally rapid increasing number of the offspring of such Europeans as a result of intercourse with the native colored women, descendants of older decades from Danish, Dutch, German, and English forefathers, and with the other nonhybrid native women, the liberal and progressive system of education now being established all over the country, it is to be feared that the social habits and native customs of the Gold Coast people will before long disappear before the mighty onslaughts of European civilization, and with such disappearance arise those conditions which are the outcome of this civilization, are the origin of cancer. The same condition will appear in the Nigerias and other native territories which are being exploited by or made as a home for the white man.

4. **Cancer.**—Neve says that many causes have been assigned for cancer. It would appear that irritation or excessive stimulation is the most important of all. He cites the reports from a Kashmir hospital: During twenty-five years, of 4,902 tumors removed by operation in the Kashmir Mission Hospital, no less than 1,720 were malignant, and of these 1,189 were epitheliomatous, and 848 were on the thighs or abdomen and were due to the irritation of the kangri, a portable fire basket, carried by the people under their clothes. When sitting down this rests against the inner sides of the thighs or the front of the abdomen. The front of the chest, the breasts, and the calves of the legs are all exposed to the irritation of heat, and they also are liable to become the seats of epitheliomatous disease, although much less frequently than the thighs and abdomen. The disease is twice as common in men as in women. The average age of the patients was as high as fifty-five. Epithelioma is extremely rare under forty. Scars from previous burns are often the starting point for epitheliomata. Many of the patients show a strong tendency to proliferating epithelium, and on the abdomen and thighs it is extremely common to find dry scaly pigmented spots or patches slightly raised from the surface. The skin is often mottled and shows the lines of distribution of superficial veins. This is due to overlying pigmentation deposited as the result of the irritation and dilatation of the veins caused by heat. Horny tumors are not rare and sometimes at their base transition into epithelioma can be demonstrated. There is also a condition allied to chronic eczema in which there is redness and a tendency to desquamation. This gradually shades off into the actual formation of scar tissue. When epitheliomatous changes are supervening, thickening is followed by raised patches like wheals. This may be followed by ulceration and gland infection. There are three types of kangri burn epithelioma—the raised, the excavated, and the mixed. In the raised type kangri burn cancer is a typical squamous celled epithelioma. In the early stages the malignancy is slight, it is too slow to infect glands, and is very amenable to operation. In late cases deep glands are involved, and in many cases owing to adhesions and brawny infiltration of the skin and celllular tissue it is inoperable. In many cases its origin is in scar tissue. It is demonstrably due to a definite cause, namely, irritation from the constant application of heat. In this respect it is similar to other epitheliomata resulting from mechanical, chemical, or thermal irritation. The nature of the cause is opposed to a parasitic theory of origin, and favors a trophic theory of cancer.

LANCET.

September 3, 1910.

1. Sterility: Its Ætiology and Treatment, By R. A. Gibbons.
2. A Report on Twenty Cases Treated with Ehrlich's Specific for Syphilis, By J. E. R. McDonagh.
3. On the Influence of the New Ehrlich Preparation, Dioxydiamidoarsenobenzol ("606"), on Recurrent Fever in Rats, By James McIntosh.
4. The Value of Ossiculectomy in Chronic Middle Ear Suppuration, as a Means of Avoiding the Complete Mastoid Operation, By Hunter F. Tod.
5. Isohæmolysis in Relation to Cancer, By Harold Upcott.
6. Further Observations upon Typhoid Carriers, By D. S. Davies, I. Walker Hall, E. Emrys Roberts, and James Fletcher.
7. Rhinosporidium Kinealyl in Unusual Situations, By A. C. Ingram.
8. A Case of Congenital Coxa Valga, By J. Jackson Clarke.

9. A Case of Leprosy in a White Person Associated with Insanity, By Robert Jones.
10. Further Researches into the Bacteriology of Epidemic Summer Diarrhœa, with Special Reference to the Classification by Absorption of Organisms Isolated Belonging to the Paratyphoid Bacillus Suipestifer Group, By R. Stenhouse Williams, H. Leith Murray, and C. Rundle.
11. The Technique of a Simplified Form of the Wassermann Reaction, By W. D'Este Emery.
12. A Case of Cerebellar Hæmorrhage, By A. E. Wilson Hird.

1. **Sterility.**—Gibbons enumerates some of the causes to which sterility may be attributed on the part of the woman, not dwelling on the sterility which is brought about voluntarily by practices which are used for the prevention of conception. It is somewhat remarkable that such practices frequently bring their own punishment, for interfering with natural processes may cause permanent sterility. Gibbons quotes Matthews Duncan, who states that the main element in the expectation of sterility is the age of marriage. According to statistics, the question of whether a woman will be sterile or not after marriage is decided within three years from the date of marriage, only seven per cent. bearing after this period. Duncan has shown, according to figures, that marriage itself, in the very young, from sixteen to nineteen years of age, is a cause of sterility; and although these figures certainly show that conception is less likely in very early marriages, it is extremely difficult to ascertain the capability for propagation in the woman. It is far more easy to do so in the man, but in the woman it is not only a case of testing the capability of the ovum for development, analogous to that of the spermatozoa, but also ascertaining the possibility and likelihood of the ovum and spermatozoa meeting together, and of the fructified ovum finding a lodgment. But while the difficulties of investigation become thereby multiplied as in the variation and permutation of an algebraical problem, the area of objective discovery becomes narrowed down to quite small limits. The vagina and portio are all that are open to ocular inspection, our remaining conclusions must be drawn from tactile impression and general examination. The amount of sterility in woman is found by counting the number of productive and nonproductive marriages of women within the reproductive age, from fifteen to forty-five. If the husband is healthy for copulation and procreation, we must remember that the following conditions are necessary in order that fecundation may ensue: 1. Normal ovulation; 2, cohabitation; and, 3, opportunity of meeting of the ovum and spermatozoa. Sterility may always be attributed to defects in one of these conditions. We have no exact knowledge of the normal process of fecundation. Ovulation and menstruation may occur independently. We cannot say if discharged ova are ripe, but we assume that they are in any "sexually ripe" woman. The causes of sterility, apart from age, may be divided into structural and functional. It will be easiest to trace the causes of structural sterility in women from without inward, and the following classification appears to be practical: 1. Structural. (*a*) Any condition which causes physical obstruction in the sexual act, such as a tough and unruptured hymen, vaginismus, etc.; (*b*) affections of the vagina and cervix, as atresia of the vagina, vaginitis, etc.; (*c*) affections of the uterus and annexa; and (*d*) any condition, apart from the pelvic organs, leading to inflammation of the peritonæum, as appendicitis. 2. Functional and constitutional causes. Incompatibility, dysmenorrhœa, general diseases, underfeeding, alcohol, obesity.

2, 3. **Reports on Ehrlich's 606.**—McDonagh reports twenty cases treated with intramuscular injection of dioxydiamidoarsenobenzol. He remarks that the earlier the syphilis the larger the dose required (from 0.45 to 0.6 gramme), and that 0.3 gramme is ample in the late stages. In almost every case an induration can be felt in both buttocks, probably due to a fibrosis caused by the caustic action of the sodium hydrate; whether the induration will ever disappear time alone will show; at any rate, it causes the patient no inconvenience. Beyond the improvement observed by the naked eye, he was very much struck by the extraordinary change for the better in almost every patient's general condition; they not only appeared brighter, but felt ever so much better and put on weight; this alone is a great achievement, since there is scarcely a patient that does not become depressed, anæmic, and lose weight under mercurial treatment. McDonagh also states that the greatest proof we have of the nontoxicity of this drug is the fact that healthy animals behave quite indifferently to an injection, and that it requires 0.1 gramme per kilo to kill an animal, which would in a man be equivalent to about 7 grammes; this being the case we shall no doubt hear of larger doses being used with impunity.—McIntosh reports the results of laboratory experiments. In the experiments rats were used in every instance, and the weight of the animals employed was in each case as near 100 grammes as possible. As a general rule 0.005 gramme of "606" for a rat of 100 grammes (i. e., 0.05 gramme per kilogramme of animal) was found to be the most suitable amount as a curative dose; with this quantity no bad effects were observed. The medicament was always given subcutaneously after it was made up in the manner advised by Alt. The required amount, 0.005 gramme, is weighed and transferred to a test tube; a few drops of methyl alcohol are added to dissolve the preparation and then 1 c.c. of normal saline solution. The solution, which is strongly acid, is neutralized with a normal solution of sodium hydrate; a slight excess of sodium hydrate is then added till the precipitate which has been formed is nearly all dissolved. The resulting slightly opaque solution is now ready for use. Another experiment suggests that a slight general infection which is not apparent to the microscope does occur when syphilis virus is given at the same time as the dioxydiamidoarsenobenzol. This infection must, however, be very slight, as twenty-four hours later the blood is not infectious. The destruction of the spirochætæ by the specific is therefore not complete till more than twenty-four hours afterward. This result is certainly much better than what has been achieved by any of the other chemotherapeutic substances in protozoal infections.

Previously to the discovery of "606," atoxyl was considered to be the most efficient remedy for the spirillosis of fowls; yet, after a curative dose of atoxyl in that infection, spirochætæ can be demonstrated in the blood for three days. Rats which have received an injection of "606" at the same time as the virus are found to have developed a complete immunity to the disease. Of several rats thus treated, or one might say vaccinated, only one was found not to have become immune to a reinoculation. Owing to the insolubility of dioxydiamidoarsenobenzol, except in a great excess of fluid or in a medium which is alkaline, an accurate estimation of its destructive power on the parasites is impossible. In dilutions of 1 in 500 it appears to have very little injurious effect on the spirochætæ, a result which merely supports the older fact that the antiseptic or bactericidal properties of a substance are no indication of its healing properties. The high curative properties of dioxydiamidoarsenobenzol and its feeble action *in vitro* suggest that in all probability some change in its composition is brought about by the intermediary of the animal organism, such as happens in the case of atoxyl. The discovery of the actual mechanism by which the parasites are destroyed by "606" is a problem which would be rather difficult to solve. In the clearance of the spirochætæ from the organism there are evidently two processes at work—namely, a direct destruction of the parasites and an increased phagocytosis. The latter is known to be the process principally involved in the production of a natural cure by a crisis, and an injection of dioxydiamidoarsenobenzol is followed by a considerable degree of leucocytosis, which suggests that phagocytosis also plays an important part in the production of the artificial crisis. What part the elaboration of antibodies plays in the latter it is impossible to say. The chance of any toxic effects occurring in the employment of a therapeutic dose of "606" is extremely remote, as from the foregoing experiments, as well as from Hata's, it is seen that the *dosis maxima bene tolerata* is six times as great as the *dosis curativa;* while the fact that one dose alone is required to effect a complete cure in most spirochætæ infections eliminates the possibility of toxic results from accumulation or from excessive sensibility.

WIENER KLINISCHE WOCHENSCHRIFT.

August 18, 1910.

1. Report Concerning the Results thus far Obtained in the Treatment of Syphilis with the Preparation of Ehrlich-Hata (120 Cases), By Pick.
2. The Treatment of Syphilis with Asurol, By Rock.
3. The Method of the Quantitative Determination of the Proteolytic Leucocyte Ferment and the Ferment Index (*Index Proteolyticus*) of the Leucocytes in the Human Blood, By Franke.
4. The Meiostagmin Reaction in Serous Effusions, By Gasharrini.

1. **Treatment of Syphilis with Ehrlich-Hata's Preparation** (606).—Pick gives in detail his observations on the effect produced by 606 in cases of primary syphilis before and after the outbreak of the exanthem of secondary syphilis, including ten patients who still manifest scleroses, of malignant syphilis, of late syphilis, including gummatous osteoperiostitis and other gummata, of hereditary syphilis, and of syphilis of the nervous system. He noticed recurrence in two cases, one of malignant, the other of primary syphilis. In regard to the behavior of the Wassermann reaction he refers to the results obtained by Epstein, which will be published in full elsewhere. The change of the positive reaction to negative took place in most cases after four weeks. The shortest interval between the positive and the negative reaction was twelve days, the longest yet observed seven weeks. A change from a negative to a positive has not yet been observed even in those cases in which there was a recurrence of the symptoms, or in which the symptoms did not wholly disappear. In the patients with primary syphilis who were treated preventatively no secondary symptoms developed and maintained a negative reaction, the longest period of observation being twelve weeks. He has not observed any such bad after effects as those described by Bohac and Sobotka, which might possibly be explained by a direct injury to the sciatic plexus. The fever following the injection reached the height of 39.8 C. in only one case. An erythema frequently appeared at the place of injection, and Herxheimer's reaction was frequently demonstrable in secondary syphilis. A symptom very often observed for from four to six days after the injection was a diminution in the quantity of the urine, which fell in some cases to from 400 to 500 cm. daily, while its specific gravity ranged from 1,015 to 1,020. This symptom might be ascribed to a reduction of the secretion, as it occurred in the cases in which the injection was followed by a profuse perspiration while the patients lost appetite and complained of thirst. The pulse in these cases ran from 90 to 108. The symptoms were not threatening. In résumé he says that this preparation develops a specific action such as has never been seen before in the treatment of syphilis. The quickness and promptness of its action, exhibited wonderfully upon gummata, recall the action of quinine in malaria. Recurrences and the incomplete healing of certain forms with the small doses at present used derogate in no way from this wonderful action. The principal indications for the remedy are malignant syphilis, the obstinate affections of the mucous membranes, and preventive treatment. It has won its place in the treatment of syphilis, even if we are not now ready to dispense with mercury.

2. **Treatment of Syphilis with Asurol.**—Rock says that asurol, a double salt of salicylate of mercury and amidooxybutyrate of sodium, is a slightly soluble salt of mercury which, through its rapid resorption, exerts in most cases an accelerating influence upon the retrogression of syphilitic symptoms. Its use is sometimes complicated by the occurrence of after effects, which disappear, however, on stopping use of the drug without causing any permanent disturbance. Its effect is not lasting.

4. **The Meiostagmin Reaction in Serous Effusions.**—Gasharrini says that specific meiostagmin is present in tuberculous or neoplastic effusions, as well as in the blood serum of the affected persons, but that it is not demonstrable in the so called idiopathic effusions.

ZENTRALBLATT FÜR CHIRURGIE.

September 3, 1910.

1. Origin of Multiple Hydatid Echinococcus Cyst of the Abdomen by Deposits of the Scolices, By F. Oehlecker.
2. The Technique of Foerster's Operation, By Guleke.

1. **Echinococcus Cysts of the Abdomen.**—Oehlecker reports the case of a boy of seventeen, who, when sixteen years of age, met with a collision which was reflected mainly against the abdominal wall. The following year he fell from his bicycle and struck the pavement on his abdomen. He was brought into the hospital in a serious condition, and immediate laparotomy showed the presence of a huge echinococcus cyst of the liver. At one portion of the cyst, there was a small opening through which protruded a daughter cyst. The entire omentum was permeated with small echinococcus cysts and others could be seen all over the upper part of the abdomen. The author is of the opinion that the extension of the disease to the abdominal cavity can be explained by the collision of a year before in which the original cyst was broken and scolices were scattered over the upper part of the abdomen. The boy made a good recovery from the operation.

ZENTRALBLATT FÜR GYNÄKOLOGIE.

September 3, 1910.

1. Decapsulation of the Kidneys in Eclampsia, By J. Gobiet.

1. **Decapsulation of the Kidneys.**—Gobiet reports two cases of intra partum eclampsia (in one of which the patient was delivered by vaginal Cæsarean section), who were both subjected to renal decapsulation. One died, the other recovered. He believes that the operation should be performed, in timely season, in all cases of eclampsia in which the renal insufficiency is the main factor and remains so after labor. Sometimes the effect of the decapsulation is diuretic to a marked degree, and in some cases the diuresis acts as a life saving measure. There are cases, however, in which even the timely performance of the operation is useless on account of the profound changes which have taken place in the kidneys.

Proceedings of Societies.

AMERICAN PUBLIC HEALTH ASSOCIATION.

Thirty-eighth Annual Meeting Held in Milwaukee, September 6, 7, 8, and 9, 1910.

The President, Dr. Charles O. Probst, of Columbus O., in the Chair.

Report of the Joint Committee on Mailing Infectious Material.—Dr. John F. Anderson, of Washington, D. C., said that the proposed modifications of the regulations for the mailing of infectious material had finally been promulgated by the Post Office Department under date of April 22, 1910. The committee believed that its efforts had resulted in the promulgation of regulations which were a decided improvement over those formerly enforced. The regulations had been considerably simplified. The committee was successful in having the privileges of the mails for the transmission of infectious material extended to include Federal, State, municipal, and other laboratories upon the issuance of a formal permit by the Postmaster General.

Studies on Self Purification of Streams.—Dr. G. F. Ruediger, of Grand Forks, North Dakota, detailed a series of experiments on this subject, and then presented the following conclusions: Colon bacilli and typhoid bacilli disappeared much more rapidly from polluted river water during the summer months than during the winter months when the river was covered with ice and snow. The destruction of these organisms in the river water during the summer months was in a large measure due to the growth of microscopic plants and other organisms which apparently gave off dialyzable substances which were harmful to the *Bacillus coli* and *Bacillus typhosus*. That such substances were given off by the saprophytic bacteria was clearly shown by Frost several years ago, and the author's experiments simply confirmed Frost's by attacking the problem in a slightly different way. These effects were lost in the winter, as no growth took place below 32° F. The direct rays of the sun also were an important factor, and their effects were entirely lost when the river was covered with a thick layer of ice and snow.

The practical value of this investigation was very evident. It explained why some of the northern cities where sewage polluted river water was used in the water works system were more frequently troubled with outbreaks of typhoid fever during the winter months. This was illustrated at Minneapolis last winter, and he believed was true at Lawrence, Mass., before the installation of the filter.

When bacteriological analyses of sewage polluted river water were to be made at the site of a proposed water works intake pipe, it was important that samples should be collected and analyzed both in the winter and in the summer. Analyses of samples collected during the summer did not give reliable information in regard to the condition of that water when the river was covered with ice and snow. The analyses showed that the pathogenic bacteria from the sewage traveled several times as far in the water under the ice before they were destroyed as they would in an open river during warm weather.

Dr. H. W. Hill, of Minneapolis, said the experiments which they undertook confirmed in every way the observations and conclusions of the essayist regarding winter river typhoid and summer typhoid. They had found that typhoid bacilli might die out in going down the river in summer under conditions where they would persist during the winter.

Dr. Peter H. Bryce, of Ottawa, Canada, said that the author seemingly did not take into account the question of sedimentation during the two days in the river. They all remembered that Pettenkofer's tests long ago at Munich showed about ninety per cent. of all bacteria in water by dilution and by sedimentation had disappeared within a distance of ten miles.

Dr. E. C. Levy, of Richmond, Va., said that at the Winnipeg meeting of this association Dr. Freeman and he presented a joint paper on typhoid fever in the South, with special reference to the disease in Richmond. In that paper they brought out the

point which had been explained to-day, but made no attempt to explain why it was that water borne typhoid was especially a disease of winter months, though they proved to their satisfaction that such was the case. Their opinion was arrived at purely and simply from an epidemiological standpoint. They had no laboratory facts to corroborate this. During the years since that time their views had been confirmed in every way to such an extent that in Richmond, after they had passed the winter months, they did not worry about water typhoid.

Dr. Ruediger would like to say a word with reference to sedimentation, which had been referred to by Dr. Bryce. He did not think the factor of sedimentation would alter the experiments in any way; so far as he could see, there would be as much sedimentation in winter as in summer. This factor need not be considered in this particular study. Another study might be based on the factor of sedimentation, which he believed would be the same in summer as well as in winter.

The Sanitary Registration of Houses in Mexico.—Dr. Jesus E. Monjaras, of Mexico City, said the board of health in Mexico had made great progress in the sanitary records in that city. The plan of the city showed the houses in which persons had died of tuberculosis. Each house was shown on the plan by a number which corresponded to the number of cases observed in that house, and each one had its separate file containing all the details of cases as well as the work which had been ordered to improve the sanitary conditions of the houses. With this plan they were able to show the number of deaths caused by tuberculosis or any of its allied affections from the year 1891, with the age and sex of those who died, and the wards in the City of Mexico in which those deaths were recorded. The sanitary registry of the houses, therefore, constituted a necessary institution in all cities, by the aid of which the sanitary and municipal authorities, as well as the general public, could obtain easy and certain knowledge of the houses which constituted foci of infection.

Dr. Frederic Torralbas, of Havana, Cuba, stated that the work which the essayist had described had been carried on in Havana for some years. It was the duty of the sanitary inspector to cover the complete history of houses. An inspection was made of from 1,800 to 2,000 houses a day, so that cases of tuberculosis were easily traced.

Sanitation of Bakeries and Restaurant Kitchens.—Mr. Charles B. Ball, of Chicago, stated that in their experience with bakeries and restaurant kitchens they had been led to the conclusion that new installations of restaurant kitchens were required. Ample space must be provided in which the employees might perform the various operations. The contingency of expansion at a future date should be considered, as the tendency to enlarge the dining room without providing additional kitchen facilities was found in a great many cases. The arrangement of the various appliances in their relation to each other should insure the isolation of dish washing and garbage storage from the handling of food. Adequate provision must be made for the removal of cooking odors, not alone from the ranges, but also from vegetable boilers, so as to avoid a nuisance in other parts of the building and in the neighborhood. The Underwriters' Association now required that ventilation ducts from large ranges be built of heavy iron plate and carried through the top of the building without any other connections, so that the grease and soot might be burned out of them as from a chimney flue, without incurring fire danger to other rooms. Ample toilet facilities and wash rooms, separate for each sex and apart from those provided for the public, must be furnished. The wash basins should be located outside of the toilet rooms, in order that it might be apparent to those in charge that the hands were cleansed after leaving the toilets. Proper locker rooms, with exceptional means of ventilation, must be provided in order to avoid the nuisance of the storage of either street or working clothes in tightly closed cupboards. Well ventilated refrigerators were required in numbers sufficient to afford separation for the different classes of food and especially for milk and butter. The best examples of the application of these rules of design to new bakeshops and kitchens were to be found in upper stories, preferably the top story, of certain high buildings. Such installations of superior type were at present by no means rare.

Practical Methods of Supervising the Milk Supply of Cities.—Mr. J. Bosley Thomas, of Baltimore, discussed permits for the sale of milk and cream; methods of keeping records, collecting samples, and recording results; methods of transporting and delivering milk; communicable diseases; diseases in houses where milk was delivered in bottles; bovine tuberculosis; supervision of dairy farms; and butter fat standards. He said that, while there were many admirable methods used by various authorities in the administrative control of the milk supply, there was little or no standardization of these methods. It therefore seemed advisable that some representative society or body should appoint a committee to establish or recommend standard practical methods that would be suitable for universal use.

Saving Children from Milk Borne Diseases.—Mr. Nathan Straus, of New York, stated that the old city of New York, now the borough of Manhattan, had established a new record in the saving of the lives of babies. Notwithstanding unusually severe periods of intensely hot weather during the past summer, there had been fewer deaths of children under five years than in any preceding summer, and for the first time in the history of the city summer mortality had fallen to a rate less than 50 per mille per annum. When he first undertook to protect the babies of New York from milk borne diseases by supplying pasteurized modified milk in 1892, the summer saw the dying of 6,612 children under five years, making a rate per mille per annum of 136.1. With the steadily increasing use of pasteurized milk there had been a steady decline in infant mortality, until the summer just ended showed only 3,900 deaths in a population of children larger by 125,000 that that of 1892. In other words, in 1892 964 children out of every 1,000 survived the summer, while in 1910 there were 988 who escaped death out of each thousand. In his practical experience the saving of

children from milk borne diseases warranted the assertion that the pasteurization of milk supplies of our cities, under careful health department supervision, would infallibly reduce the number of cases of infectious diseases and save lives of babies.

In no other way could this association save so many mothers from grief at the loss of their little ones as by hastening the time when efficient pasteurization would be the rule, and when the milk borne diseases would be as rare as the plagues that medical science had practically abolished.

The Prevention of Mental Defects and Mental Diseases.—There was a general discussion on this subject. Dr. WILLIAM A. WHITE, of Washington, D. C., discussed the preventive principles in the field of mental medicine. The practical things that might be done at once in any community were these: "1. The securing of legislation that places the responsibility for the care of the insane previous to commitment in the local health office. 2. Every city of one hundred thousand inhabitants, or over, to have a psychopathic ward connected with its municipal hospital, which is as accessible for the mental case as the other wards are for general medical and surgical cases. This ward should have an out patient department. 3. The organization of an after care society to assist persons who have been discharged from a hospital for the insane to get on their feet and to point out to them ways of avoiding the conditions which led to their breakdown. 4. The passage of adequate laws for the control of the labor of women and children. 5. Popular education. By the use of this term I am not merely dealing in a glittering generality that may mean nothing or everything. We have in this country nearly two hundred State hospitals for the care of the insane. These hospitals, each one of them, should be a centre of information for the community in which it exists, and its medical officers should use their position to spread information about mental disorders. The superintendent or a member of the staff should deliver one or more popular lectures each winter, to which the public are invited. Much might be accomplished in this way if all hospitals would do this. 6. Field work from the State hospitals and psychopathic wards as centres to study conditions under which insanity has developed, to furnish assistance to the hospital in dealing with its patients, and to cooperate with the after care society. 7. More liberal support by city and State of scientific research work in this field, especially along the lines of ætiology and prophylaxis."

The Prevention of Feeblemindedness.—Dr. E. R. JOHNSTONE, of Vineland, N. J., said that two or three States had passed laws authorizing the unsexing of certain degenerates after they got into institutions, but they had to get into the institutions first. He heartily approved of the operation of castration and merely agreed to vasectomy and oophorectomy for want of something better, for after these operations had been performed a fair percentage of the subjects might be returned with safety to their homes, and thus make room for others in the institutions, but the ideal way was to gather all of the feebleminded into institutions and train them in so far as possible to be self supporting; plenty of industrial occupation and very little academic training. Thirty to fifty per cent. could be made entirely self supporting after ten years' training. Take the women of childbearing age first and teach them to raise and can small fruits, raise poultry and garden truck, knit underwear, and weave rugs, carpets, etc. Then take the others as young as possible, and the economic problem came close to solution. They should not talk, but get to work. The numbers were increasing. If we did not care for them in well conducted training schools, where they might learn to contribute toward their own support, we must keep them in almshouses, reformatories, prisons, and other institutions, and when they were led into evil ways we had to pay for these persons' arrest, their trial, and the damage they had done. If feeblemindedness was to be checked, we personally must do something.

(To be concluded.)

Letters to the Editor.

PROFESSIONAL SECRECY.

FAIRLEE, VT., *September 9, 1910.*

To the Editor:

Permit me a few words of rejoinder to the criticism of my remarks on the subject of Professional Secrecy made in your editorial article with that title in the *Journal* for September 3d.

You cite the instance, considered by me, when a man with syphilis is resolved to marry, and state that I remark "that the guarantee of secrecy encourages such a man to submit himself to medical treatment, thus diminishing the probability of his conveying infection, whereas without such a guarantee he would avoid treatment and perhaps become more and more dangerous." This is a very weak understatement of my argument. It entirely misses the main contention. It would make it appear that the question is one chiefly of individual interests that clash; whereas my argument was founded on a balancing of the net result to the general welfare of the probable consequences respectively of the retention or removal of the obligation to secrecy in the two cases.

Let us put the matter in the form of a parallel:—

The physician is denied the right to disclose.	*The physician is allowed to right to disclose.*
The patient probably comes under treatment without fear.	The patient will probably not disclose his case to the physician.
He may be cured, or his condition be at least so far ameliorated that the danger to his future wife—or any other women with whom he may cohabit—shall be minimized or obviated, and thus so much fresh infection and spread of the disease will be obviated.	His future wife will most likely be infected, and he is likely also to infect other women by intercourse—for this man would probably not confine himself to any one woman, wife or not.
His ignorance on the danger of communicating the disease to innocent persons by kissing, pipes, drinking and eating utensils, money put in the mouth while seeking change, and innumerable other unthought of means, can be enlightened.	He is left in ignorance of these dangers, which, at any rate, inasmuch as the acts are for the most part indifferent to him, even selfishness would not prevent him from trying to avoid.
He may avoid the chance of adding to the world's luetic population.	He will almost certainly add to the hereditary luetics in the world.
Not all men, by any means, who have contracted syphilis are brutalized, and in very many cases an appeal to his higher	The physician loses the opportunity, not only of enlightening his ignorance—for many men think themselves cured long be-

nature will prevent the contemplated marriage, or at least induce him to defer it until such time as he can be considered moderately safe—so far as such can ever be considered the case. He may even be induced to abstain from intercourse altogether. Failing a successful appeal to his better nature, his fears may be wrought upon. It can be shown him that the consequences will inevitably demonstrate, without any need of formal accusation, his evil doing.

He can probably be made to comprehend that his future children will learn to curse him for his crime against them.

fore the possibility of infecting has been reduced to a minimum—but of persuading him by an appeal, either to his better self or to his fears, to minimize or obviate all risk of infecting others, innocent or not, in any way.

In short, if the physician is known to be released under such circumstances from the obligation to professional secrecy, all these advantages will be lost in the great majority of cases, for he will elect—more especially in these days, when the general sense of moral turpitude is more developed in regard to sexual immorality than in the past—not to consult a physician, who would be likely to betray his guilt, but will prefer to treat himself (ineffectually, no doubt) with quack remedies or to follow the promptings of friends who have "gone through the mill" themselves. And thus *all* the evil consequences it is sought to avoid will ensue to an even greater extent. In order to enable the physician to save in one case, he is to foster and promote that which probably in thousands, certainly in hundreds, of cases will result in destruction. This is to oppose the particular to the general with a vengeance.

You say that the "practical portion" of my article "seems to have been written under a misapprehension—the erroneous supposition that a physician is under all circumstances legally forbidden to divulge information obtained from a patient as to that patient's physical condition." I am not, and never have been, under any such misapprehension. In England there is no special legal "privilege" for the physician, at any rate in criminal cases; if so ordered by the court he must testify or go to prison for contempt. The English courts, I believe, have held more than once that no interest of any kind can be considered as superior in importance to the strict and impartial administration of justice; and if justice cannot be done without sacrificing in a particular instance those general considerations which ordinarily it is of the highest importance to conserve, then they must be sacrificed—*Fiat justitia, ruat cælum.* If your contention holds, that in such a case as that supposed the physician may rightfully break the law of silence in accordance with his own convictions that the public weal, as well as private right, demands it, then *a fortiori* must it be granted that the court shall have the right to order him to break that silence whenever it is convinced that such a course is absolutely essential to the due administration of justice. To defend, as you appear to do, the right of the physician, under the plea of the inviolability of professional confidence, to be excused from giving in testimony knowledge of circumstances material to the case and considered by (at any rate) the highest court of the State to be essential to the administration of justice, while at the same time according to him the right to violate that inviolable confidence at the instance of private, or even professional, judgment, seems to me a *reductio ad absurdum* of the very basis upon which the civilized State rests its foundation.

You say "it might be difficult to prove 'knowing conveyance' except on the physician's testimony, and that testimony he would be debarred from giving save with the patient's consent." I cannot, however, accept your implied conclusion that the only way in which the physician could seek to reinforce his "moral suasion" would be "by resorting to the idle threat of giving information in spite of the law." On the contrary, the patient could be very easily shown what the law would hold over him; and the objections I have named above to the removal of the seal of silence from the *practitioner* would not apply in the case of a physician appointed by a court to examine a patient and report on his condition—a provision which could easily be made in such an act as I suggested; for it must be remembered that the underlying principle of "professional confidence," from a legal viewpoint, is based, not on the protection of the client (or patient, where legal sanction is given to the medical secret), but only to obviate the *general deadlock* in the proper administration of justice which would be the result of destroying "full and unreserved intercourse between the two." (Phipson, *Law of Evidence.*) The "moral suasion," then, of the physician *voluntarily* consulted by the patient for purposes of treatment would be by no means materially lessened because *his* lips were sealed, when he pointed out to his patient the penalties of the law which would follow his infraction of it, and the further fact that the law could order an independent physician to examine him, whether he liked it or not, and report his findings, in the event that he should disobey with consequent criminally evil results the warnings given by the attending physician.

Kenneth W. Millican, M. R. C. S.

PULMONARY ŒDEMA.

1605 North Sixth Street,
Philadelphia, *September 7, 1910.*

To the Editor:

Under the topic, The Treatment of Œdema of the Lungs (*New York Medical Journal*, September 3, 1910, p. 475), Dr. Kramer recommends the use of nitroglycerin in all cases "irrespective of the cause." In a case of œdema of the lungs due to embolism, which I saw a year ago, the administration of 1/100 of a grain of nitroglycerin by the mouth was followed in several minutes by death, and the autopsy revealed a number of small and several large emboli in the pulmonary vessels. The source was traced to thrombi in the pelvic veins. Theoretically, nitroglycerin, by dilating the capillaries, will drive an embolus farther on into the smaller bronches, and thus lessen the area of œdema. The momentary tumultuous state of the circulation may, however, dislodge other and perhaps larger emboli. This, presumably happened in the case referred to.

S. L. Cherry, M. D.,
Pathologist, Mt. Sinai Hospital.

Book Notices.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Nursing in Diseases of the Eye, Ear, Nose, and Throat. By the Committee on Nurses of the Manhattan Eye, Ear, and Throat Hospital. J. Edward Giles, M. D., Surgeon in the Eye Department; Arthur B. Duel, M. D., Surgeon in the Ear Department; and Harmon Smith, M. D., Surgeon in the Throat Department. Assisted by John R. Shannon, M. D., Assistant Surgeon in the Eye Department, and John R. Page, M. D., Assistant Surgeon in the Ear Department. With Chapters by Herbert B. Wilcox, M. D., Attending Physician to the Hospital, and Eugenia D. Ayres, Superintendent of Nurses. Philadelphia and London: W. B. Saunders Company, 1910. Pp. 281. (Price, $1.50.)

The surgeons of the Manhattan Eye, Ear, Nose, and Throat Hospital appointed from their members a committee consisting of five surgeons, one physician, and the superintendent of nurses, to prepare a volume to be used as a textbook for the nurses in the training school connected with the hospital. The results of the labors of this committee are now before us. The constitution of the committee shows that every side of the question of nursing in diseases of the eye, ear, nose, and throat has been fully taken into consideration. We wish to call the reader's special attention to the first part, which is an introduction to the specialties described in the book, and as such contains much valuable information.

Genesis. A Manual for the Instruction of Children in Matters Sexual. For the Use of Parents, Teachers, Physicians, and Ministers. By B. S. Talmey, M. D., Former Pathologist to the Mothers' and Babies' Hospital, and Gynæcologist to the Yorkville Hospital, New York. With Nineteen Cuts, Forty-seven Drawings, in the Text. New York: The Practitioners' Publishing Co., 1910. Pp. 191. (Price, $1.50.)

When Dr. Talmey wrote his book *Woman,* he tells us, in searching through the libraries, he was unable to find any book which would cover the subject, that is, the sexual life of woman. In the preface to the present book he tells us that he was more fortunate, as he found "scores of such books full of high moral sentiments, . . . but nothing quite adequate or satisfying." We have to differ here with the author; there are some books which contain practical hints. The method of instructing children in the sexual question, as laid down by Talmey, is not new; others have mentioned it in their books and we know it has been done in several families of our acquaintance, but Talmey deserves credit for having been the first man to put these ideas so fully and explicitly into print that they can be acted upon and the advice followed by even the uneducated—and for this reason we have to thank the author for having the courage to lay bare the evil which has been known to exist, but which a few had the courage to attack at its roots. True, not every parent will subscribe to Talmey's views, but we do think that for the average child such instruction will be very useful. The book is a popular one, not written for the medical profession, but for parents, teachers, and ministers. In his chapter on continence Dr. Talmey is too sweeping in his statements. On page 166 he quotes the late Pflüger, of Bonn: ". . . About the possibility of total continence there may be a great difference of opinion. But, granted absolute abstinence is only an ideal, no ideal can be realized, otherwise it would be no ideal. We can only approach an ideal, and this would be a great gain in regard to sensual continence." This is a very practical point of view of the situation. But Talmey himself says (page 169): ". . . and the boy must learn to check his sensual impulse until marriage, which is not so hard to accomplish." If it was not so hard there would not be ninety-nine per cent. of all children masturbators (see page 60).

In the bibliography, there is one mistake which is undoubtedly not the author's fault. As is the usual practice, the bibliography is compiled by an assistant. Talmey's bibliography is arranged alphabetically, giving the family name first and then the Christian name, and while looking over this list of names we found the following item: "Cæsar, Jul., . . . Bellum gallicum." We really expected to find after Jul. the abbreviation K. C. B. What would our dear old friend Julius say if he should see his well known book *De bello gallico* quoted as was done in this book? Fournier is not mentioned in the bibliography.

But these are minor details, and, as we have said before, we can well advise parents, teachers, and ministers to study Talmey's *Genesis.*

The Vegetable Proteins. By Thomas B. Osborne, Ph. D., Research Chemist in the Connecticut Agricultural Experiment Station, New Haven. New York, London, Bombay, and Calcutta: Longmans, Green, & Co., 1909. Pp. xiii-125.

This work may be regarded as an initial step toward establishing the relationship between the vegetable and the animal proteins. The author has devoted many years of study to the subject. A large number of individual proteins of vegetable origin are now known, but in this monograph no descriptive account is given of them. They are enumerated, however, and their general chemical and physical properties are described. The work should prove exceedingly suggestive to the animal physiologist, the resemblances between the vegetable and animal proteins being very close in many instances. As the author observes in a prefatory note, "The knowledge of the chemistry of the carbohydrates has been chiefly founded on studies made with those of vegetable origin, and it is not at all beyond the range of possibility that further study of the vegetable proteins will result in greatly extending our knowledge of the chemistry of the proteins of both animals and plants."

The volume forms one of the series of Monographs on Biochemistry edited by R. H. Aders Plumer, D. S., and F. G. Hopkins, M. A., M. B., D. Sc., F. R. S., and, like others of the series, contains a very complete bibliography which affords the fullest information of the work which has been done upon the subject.

MEDICOLITERARY NOTES

The *New York Times* recently called attention to two bad *lapsus* in a paragraph in this column—"more singular" and "most innocuous." We have no explanation to offer save that we were upon our tripod at the time, acting merely as medium for our dæmon, who was greatly excited over some new

manifestation of foolishness on the part of certain antis, and poured forth his denunciations regardless of hobbling grammatical rules. As the *Times*, however, seemed to be surprised at our statement that the medical profession in general shared our opinion of the comparative harmlessness of the cigarette, we take pleasure in reiterating that statement. With general approval on the part of the medical press some years ago, this journal ranked the various methods of using tobacco according to their physiological effect as follows: Snuffing, chewing, cigar, pipes of clay, meerschaum, wood, and porcelain, chibouk, cigarette. Inhaling cigarette smoke does expose the respiratory mucous membrane to the action of a slightly irritant foreign body, but anything short of gross excess gives the membrane ample chance to recover.

* * *

There are many customs harmless, even salutary, to normal adults, that should not be permitted to children. Among these we count smoking, the drinking of fine wines, the degustation of highly seasoned dishes, the reading of certain books, and attendance at certain theatrical and operatic performances. As to the first three, we believe physicians should be accounted the sole judges of their propriety, which varies with the individual. There are, unfortunately, individuals who are unable to indulge in any of these recreations with moderation; they should be total abstainers, but restrict themselves to envy of those who can and do indulge without danger, and not seek to cut off from the average, well balanced citizen the enjoyment of the achievements of a superior civilization.

* * *

With any measures, however, intended to prevent the use of cigarettes by children we are in hearty sympathy; also with legislation or other restrictive means designed to keep them out of improper theatrical or moving picture shows, saloons, and even the streets after nightfall. We should be glad, too, to have them withdrawn, forcibly, if necessary, from restaurants and the drawing rooms and piazzas of hotels and from all mills, foundries, and business offices, and to have them for several hours each day under the care of experienced and sympathetic teachers, the remainder of their waking hours to be spent in wide, sunlit, open spaces. A very few would like to frequent art galleries, concerts, or libraries, and, if physical examination pronounced these few otherwise normal, we should favor their predilections. And we should like to see all children properly fed, no matter what taxation is necessary.

* * *

Dr. J. J. McCarthy writes of Bad Teeth *versus* Good Health, in the September *Pearson's*, an article that deserves wide reading. How Undertakers Burden the Grief Stricken, by Lewis Edwin Theiss, will be a lesson to physicians to keep their patients out of the hands of such people as long as possible.

* * *

A physician, Dr. Henry Smith Williams, discusses The Increased Cost of Living in the September *McClure's;* his colleagues wouldn't mind, perhaps, if they all could write for the magazines. Every American should read the reminiscences of Goldwin Smith, which begin in this number with an article on our civil war. Some history of the politics of New York State and several short stories of the first rank fill up a typical issue of this fine publication.

* * *

Pearson's advertises for its October issue an article on the common sense of vivisection. We hope those responsible magazines which have not already treated of this subject will soon follow suit, for it offers almost irresistible temptation to sensational space writers in need of copy in the easy pathos and general lacrymatory flubdub it furnishes so copiously. The magazine with a conscience has quite dethroned the average daily paper as a guide to opinion and is developing into the "free press" called for by ideal republican institutions.

* * *

According to Origen, the angel Raphael was the patron of the sick and infirm. We have never seen the point urged, but it seems at least possible that this is the real explanation of the substitution of the letter R at the head of the written prescription in place of the sign of Jupiter. It was a common practice among the early Christians to substitute Christian letters and symbols for the pagan. The old Jovian sign has little resemblance to the letter R, and the explanation of the change to the initial of *Recipe* has always seemed to us to be the least bit catastrophic.

* * *

The late Professor William James, of Harvard, had the very necessary equipment for a modern psychologist of a thorough grounding in anatomy and physiology, which he taught many years ago at Harvard. Not only are these sciences an indispensable introduction to the study of brain function, but they teach habits of inductive or a posteriori reasoning, from the lack of which the old fashioned psychology suffered severely.

Miscellany.

Smallpox in Japan.—Surgeon Fairfax Irwin, of the United States Public Health and Marine Hospital Service, remarks in the *Public Health Reports* of September 2, 1910, that:

The first record is of an epidemic that occurred in August, A. D. 735. In 737 another epidemic occurred affecting all classes and of great mortality. This is said to have been the greatest epidemic known in Japan up to that time, and was followed by another in the summer and autumn of 738. These were the first recorded epidemics. In A. D. 790 there was an epidemic which was said only to have affected persons of thirty years of age or older, but the observation seems to be of doubtful authenticity. There followed an interval which appears to have been free from the disease. Other epidemics then followed, which are recorded as follows: in 814; in March, 853; in 879; in August, 915, when the emperor had the disease; in June, 947; August and September, 974; and July and August, 993; in the spring and summer of 1020; in 1036; and in June, 1072. In the year 1077 two of the royal princes, Atsukata and Atsubume, died of smallpox. Epidemics continued with great frequency, as follows: 1093; February to May, 1113; May, 1143; March, 1175, when the emperor had the disease: December, 1192; April, 1209, 1277, 1311; and March, 1361. In 1374 the emperor established a benevolent hospital for the treatment of the disease, the first hospital of its kind in Japan. Other epidemics took place in 1424, 1452, 1454, 1522, and 1550. In 1549

Xavier first came to Japan and gave medicine to the Japanese; the record does not state the character of the treatment, but there is no doubt that Xavier saw a great many cases. In 1543 the Portuguese came to Japan and settled on the Island of Kyushu. Smallpox was certainly no novelty to them. In February, 1609, an epidemic is recorded in which the royal family suffered. About this time the Dutch came to Japan and trade was opened with Holland; they were allowed to live at Nagasaki and taught the medical science of those days to the Japanese. In 1798, the government opened the first medical school (Igakukwan). The ætiology of smallpox was first studied in this school under Professor Ikeda Zuisen, a famous physician of the time. . . . In the spring and autumn of 1837 there was an epidemic. In June, 1849, a Dutch ship brought some vaccine virus to Japan and Doctor Monike vaccinated three children. Doctor Narabayshi Soken obtained some of this virus from Doctor Monike and was instructed in the art of vaccination. Severe epidemics occurred in 1870, 1876, and 1877. . . . Official statistics of smallpox in Japan have been obtained from the department of home affairs for the following years: In 1898 there were 149,012 cases and 40,971 deaths, giving a death rate of 27.47. In 1899 there were 14,890 cases and 4,089 deaths. In 1900 there were 3,608 cases and 721 deaths. In 1904, 1,188 cases were recorded, with 237 deaths. It is stated that while smallpox is not a rare disease in Japan it is not permanent. It is always imported from abroad, and the infection seems to come chiefly from Korea, Manchuria, and Siberia. During 1906 there were 496 cases, of which 109 proved fatal. The total number of cases of smallpox which occurred during the year 1907 was 1,034, of which 437 were fatal, and in 1908 there were 18,075 cases ad 5,838 deaths.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of and deaths from cholera, yellow fever, plague, and smallpox were reported to the surgeon general of the United States Public Health and Marine Hospital Service for the week ending September 16, 1910:

Place.	Date.	Cases.	Deaths.
Cholera—Foreign.			
China—Amoy	July 17-Aug 6		2
China—Hankow	Aug. 1-6	2	1
India—Calcutta	July 17-23		18
India—Kurrachee	July 24-30	1	1
India—Negapatam	July 8-15		22
India—Rangoon	July 24-30		1
Java—Batavia	July 24-30	25	12
Russia—General	May 8-Aug. 6	81,083	35,759
Russia—General	July 24-30	15,244	6,944
Russia—Astrakhan, government	July 24-30	240	100
Russia—Baku	July 24-30	118	41
Russia—Baku, government	July 24-30	132	74
Russia—Black Sea, province	July 24-30	95	35
Russia—Cronstadt	July 24-30	8	2
Russia—Daghestan, territory	July 24-30	31	19
Russia—Don, territory	July 24-30	3	2
Russia—Erivan, government	July 24-30	6	5
Russia—Esthonia, government—Reval	July 24-30	1	
Russia—Kaluga, government	July 24-30	1	
Russia—Kertsch	July 24-30	17	11
Russia—Kharkov, government	July 24-30	246	120
Russia—Khazan, government	July 24-30	79	39
Russia—Kherson, government—Odessa	July 24-30	106	40
Russia—Kief, government	July 24-30	72	24
Russia—Kostroma, government	July 24-30	258	122
Russia—Kuban, territory	July 24-30	2,416	1,324
Russia—Kursk, government	July 24-30	678	245
Russia—Mohilev, government	July 24-30	31	6
Russia—Moscow, government	July 24-30	1	1
Russia—Moscow	July 24-30	4	2
Russia—Nizhni-Novgorod, government	July 24-30	155	50
Russia—Novgorod, government	July 24-30	25	9
Russia—Orenburg, government	July 24-30	116	46
Russia—Penza, government	July 24-30	63	25
Russia—Perm, government	July 24-30	41	15
Russia—Podolia, government	July 24-30	54	22
Russia—Poltava, government	July 24-30	307	129
Russia—Rjasan, government	July 24-30	222	78
Russia—Rostov on Don	July 24-30	133	26
Russia—Samara, government	July 24-30	655	278
Russia—Saratov, government	July 24-30	520	283
Russia—Simbirsk, government	July 24-30	237	100
Russia—Smolensk, government	July 24-30	172	69
Russia—St. Petersburg, government	July 24-30	3	2
Russia—Syr Darya, territory	July 24-30	27	11
Russia—Tambov, government	July 24-30	4	2
Russia—Taurida, government	July 24-30	647	323
Russia—Tchernigov, government	July 24-30	191	101
Russia—Terek, territory	July 24-30	134	45
Russia—Tiflis, government	July 24-30	475	192
Russia—Tula, government	July 24-30	164	74
Russia—Turgai, territory	July 24-30	10	4
Russia—Tver, government	July 24-30	1	
Russia—Ufa, government	July 24-30	4	
Russia—Viatka, government	July 24-30	54	47
Russia—Vitebsk, government	July 24-30	67	36
Russia—Vladimir, government	July 24-30	8	2
Russia—Volhynia, government	July 24-30	7	2
Russia—Yaroslav, government	July 24-30	15	8
Russia—Yekaterinislav, government	July 24-30	102	42
Straits Settlements—Singapore	July 17-23	1,799	822
		10	8
Yellow Fever—Foreign.			
Brazil—Manaos	Aug. 7-13	2	2
Plague—Foreign.			
Brazil—Bahia	July 18-22	1	1
Egypt—Alexandria	Aug. 3-9	2	1
Egypt—Assiout, province	Aug. 5-13	1	1
Egypt—Assouan, province	June 8		1
Egypt—Dahkalieh, province	June 23-July 22	1	
Egypt—Port Said	June 14-Aug. 16	24	11
India—Bombay	Aug. 3-9		36
India—Calcutta	July 17-23		19
India—Rangoon	July 24-30		20
Mauritius	June 3-30	4	2
Russia—Menouf, province	June 23-July 22	32	7
Russia—Odessa	July 18-Aug. 9	17	5
Zanzibar—Zanzibar	Sept. 10	1	
Smallpox—United States.			
Colorado—Archuleta County	Aug. 1-31	1	
Colorado—Chaffee County	Aug. 1-31	1	
Colorado—Clear Creek County	Aug. 1-31	1	
Colorado—Conejos County	Aug. 1-31	1	
Colorado—Denver County	Aug. 1-31	6	
Colorado—El Paso County	Aug. 1-31	1	
Colorado—Huerfano County	Aug. 1-31	1	
Colorado—Las Animas County	Aug. 1-31	2	
Iowa—Linn County	Aug. 1-31	5	
Iowa—Plymouth County	Aug. 1-31	1	
Iowa—Pottawattamie County	Aug. 1-31	4	
Iowa—Warren County	Aug. 1-31	7	
Kansas	July 1-31	45	
Louisiana—New Orleans	Aug. 29-Sept. 3	4	
New Jersey—Cumberland County	Aug. 1-31	3	
North Dakota—Bowman County	Aug. 1-31	37	
North Dakota—Stutsman County	Aug. 1-31	1	
Texas—General	June 1-30	246	9
Smallpox—Foreign.			
Argentina—Mendoza, province	July 27		Epidemic
Argentina—San Juan, province	July 27		Epidemic
Brazil—Bahia	July 18-29	29	19
Brazil—Santos	July 10-16	1	2
Canada—Toronto	Aug. 21-27	1	
Canada—Victoria	Aug. 21-27	1	
Ceylon—Colombo	July 24-30		1
France—Paris	Aug. 7-20	5	
Hawaii—Hilo	Sept. 10	1	
India—Bombay	Aug. 3-9		2
India—Madras	July 23-Aug. 5		4
India—Rangoon	July 24-30		2
Italy—Naples	Aug. 15-21	3	
Portugal—Lisbon	Aug. 14-20	54	
Russia—Moscow	Aug. 7-13	4	2
Russia—St. Petersburg	July 24-Aug. 6	27	12
Straits Settlements—Singapore	July 17-23	8	1
Uruguay—Montevideo	June 1-30	216	105
Zanzibar—Zanzibar	July 17-23		11

Public Health and Marine Hospital Service:

Official list of changes in the stations and duties of commissioned and other officers in the Public Health and Marine Hospital Service for the seven days ending September 14, 1910:

BINGHAM, E. O., Acting Assistant Surgeon. Granted fifteen days' leave of absence from August 16, 1910, on account of sickness.

GRIMM, R. M., Assistant Surgeon. Leave of absence for four days from September 1, 1910, amended to read four days from September 13, 1910.

GWYN, M. K., Passed Assistant Surgeon. Detailed as member of a Revenue Cutter Service Retiring Board, Baltimore, Md., September 15, 1910.

HORNING, HENRY, Acting Assistant Surgeon. Granted seven days' leave of absence from September 6, 1910, under paragraph 210, Service Regulations.

HUME, LEA, Acting Assistant Surgeon. Granted five days' leave of absence from August 1, 1910.

MASON, WILLIAM C., Acting Assistant Surgeon. Granted seven days' leave of absence from September 18, 1910.

MCINTOSH, W. P., Surgeon. Detailed as member of a Revenue Cutter Service Retiring Board, Baltimore. Md., September 15, 1910.

Pettyjohn, Joseph, Passed Assistant Surgeon. Granted one month's leave of absence from September 15, 1910, on account of sickness.

Preble, Paul, Assistant Surgeon. Granted ten days' leave of absence from September 8, 1910.

Robinson, D. E., Passed Assistant Surgeon. Granted one month's leave of absence from September 8, 1910.

Sinclair, A. N. Acting Assistant Surgeon. Granted four days' leave of absence from August 23, 1910, under paragraph 210, Service Regulations.

Sterns, C. O., Pharmacist. Granted twenty-six days' leave of absence from September 12, 1910.

Thompson, Lewis R., Assistant Surgeon. Directed to proceed to Chicago, Ill., and report to the Medical Officer in command for duty and assignment to quarters.

Walkley, W. S., Acting Assistant Surgeon. Granted three days' leave of absence from September 16, 1910.

Wallace, C. R., Acting Assistant Surgeon. Granted nineteen days' extension of leave from August 3, 1910, on account of sickness.

Warner, H. J., Assistant Surgeon. Granted seven days' leave of absence from September 17, 1910.

Wertenbaker, C. P., Surgeon. Granted one month's leave of absence from September 12, 1910.

Appointment.

Dr. Lewis R. Thompson commissioned (recess) an Assistant Surgeon in the Public Health and Marine Hospital Service, September 6, 1910.

Reinstatement.

F. A. Stump reinstated as a pharmacist of the third class, September 9, 1910.

Boards Convened.

Board of medical officers convened to meet at the marine hospital, San Francisco, Cal., September 21, 1910, for the purpose of making physical examinations of officers of the Revenue Cutter Service. Detail for the board: Passed Assistant Surgeon R. E. Ebersole, chairman; Assistant Surgeon R. A. Kearney, recorder. September 9, 1910.

Board of medical officers convened to meet at the marine hospital, Baltimore, Md., September 21, 1910, for the purpose of making physical examinations of officers of the Revenue Cutter Service. Detail for the board: Surgeon W. P. McIntosh, chairman; Passed Assistant Surgeon M. K. Gwyn, recorder, September 9, 1910.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending September 17, 1910:

Bartlett, William K., Captain, Medical Corps. September 13th, granted five days' leave of absence.

Bierbower, Henry C., Lieutenant, Medical Reserve Corps. Ordered to proceed to Fort Benjaimn Harrison, Indiana, for duty with the 6th Cavalry, at Camp of Instruction.

Bundesen, H. N., Lieutenant, Medical Reserve Corps. September 11th, left Fort D. A. Russell, Wyoming, on Fifteen days' leave of absence.

Cullen, Charles W., Lieutenant, Medical Reserve Corps. September 13th, ordered to Fort D. A. Russell, Wyoming, and granted two months' leave of absence to take effect upon arrival at station.

Jackson, T. W., Lieutenant, Medical Reserve Corps. September 13th, left Fort Hunt, Virginia, on ten days' leave of absence.

Knox, Howard H., Lieutenant, Medical Corps. September 12th, granted ten days' leave of absence.

Marietta, Shelley U., Lieutenant, Medical Reserve Corps. September 9th, relieved from duty at Camp of Instruction, Fort Benjamin Harrison, Indiana, and about September 15th, returned to his proper station, Fort Des Moines, Iowa.

McCown, Thomas B., Lieutenant, Medical Reserve Corps. September 11th, left Fort Barrancas, en route to Fort Dade, Florida, on temporary duty.

Mills, Frederick H., Lieutenant, Medical Reserve Corps. Upon the abandonment of Fort Walla Walla, Washington, will proceed to Fort Missoula, Montana, for duty at that station.

Schreiner, S. B., Major, Medical Corps. Upon the abandonment of Fort Walla Walla, Washington, will proceed to Boise Barracks, Idaho, for duty at that station.

Sherwood, John W., Lieutenant, Medical Reserve Corps. September 12th, granted twenty days' leave of absence.

Tenney, Elmer S., Lieutenant, Medical Reserve Corps. Granted leave of absence for twenty days, terminating not later than November 3, 1910.

Usher, F. M. C., Major, Medical Corps. September 9th, granted leave of absence for one month.

Walkup, Joseph C., Lieutenant, Medical Reserve Corps. September 10th, granted fifteen days' leave of absence.

Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending September 17, 1910:

Casto, D. H., Assistant Surgeon. Detached from the *Princeton* and ordered to the *Philadelphia.*

Donelson, M., Passed Assistant Surgeon. Detached from the Naval Hospital, Naval Home, Philadelphia, Pa., and ordered to duty at the Naval Hospital, Newport, R. I.

Hermesch, H. R., Passed Assistant Surgeon. Commissioned a passed assistant surgeon from July 12, 1910.

Longabaugh, R. L., Passed Assistant Surgeon. Commissioned a passed assistant surgeon from May 4, 1910.

McDowell, R. W., Assistant Surgeon. Discharged from treatment at the Naval Hospital, Norfolk, Virginia, and ordered to the Naval Medical School Hospital, Washington, D. C., for treatment.

Miller, J. T., Passed Assistant Surgeon. Commissioned a passed assistant surgeon from June 27, 1910.

Reed, E. U., Passed Assistant Surgeon. Detached from the *Philadelphia* and ordered to the *Princeton.*

Births, Marriages, and Deaths.

Died.

Armstrong.—In Henderson, Kentucky, on Monday, September 12th, Dr. W. F. Armstrong, aged thirty-six years.

Bancroft.—In Warren, Ohio, on Tuesday, September 13th, Dr. E. M. Bancroft, aged forty-two years.

Bramble.—In Cincinnati, Ohio, on Friday, September 2d, Dr. D. D. Bramble, aged seventy-one years.

Castle.—In Kansas City, Missouri, on Monday, September 5th, Dr. Homer K. Castle, aged sixty-one years.

Clarke.—In New York, on Wednesday, September 14th, Dr. James Henry Clarke, aged forty-four years.

Daggett.—In New Haven, Connecticut, on Sunday, September 18th, Dr. William Gibbons Daggett, aged fifty years.

Evatt.—In Chicago, on Monday, September 12th, Dr. William H. P. Evatt, aged fifty-five years.

French.—In Battle Creek, Michigan, on Saturday, September 10th, Dr. S. S. French, aged ninety-four years.

Gates.—In Ronceverte, West Virginia, on Saturday, September 10th, Dr. Milan A. Gates, aged fifty-five years.

Gillespie.—In New York, on Monday, September 12th, Dr. J. Frank Gillespie, aged forty-one years.

Gregory.—In Greensboro, North Carolina, on Saturday, September 10th, Dr. Richard K. Gregory, aged seventy-four years.

Hawks.—In Como Springs, Henrico County, Virginia, on Thursday, September 8th, Dr. I. J. Hawks, aged seventy-nine years.

Keys.—In Chicago, Illinois, on Tuesday, September 6th, Dr. T. Frank Keys, aged fifty-three years.

Lyon.—In Plattsburg, N. Y., on Wednesday, September 7th, Dr. E. M. Lyon, aged seventy-four years.

McIntyre.—In Wheeling, West Virginia, on Monday, September 12th, Dr. G. L. McIntyre, aged sixty-four years.

Ransom.—In Utica, New York, on Tuesday, September 13th, Dr. Charles Cook Ransom, aged fifty years.

Reid.—In Brooklyn, on Tuesday, September 13th, Dr. Joseph A. Reid, aged twenty-three years.

Sloan.—In Utica, New York, on Wednesday, September 7th, Dr. Hugh Sloan, aged sixty-six years.

Wahl.—In Milwaukee, Wisconsin, on Friday, September 9th, Dr. Emil Wahl, aged forty-eight years.

Wright.—In Steeleville, Pennsylvania, on Saturday, September 3d, Dr. John S. Wright, aged seventy-seven years

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